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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

VOL. I, No. 1, pp. 1--28.

ON CERTAIN TIBETAN SCROLLS AND IMAGES LATELY BROUGHT FROM GYANTSE

BY

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Smithsonian Institution
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16-10-05

I. *On certain Tibetan Scrolls and Images lately brought from Gyantse.*

By Satis Chandra Vidyābhūṣaṇa, M.A., M.R.A.S., *Professor of Sanskrit and Pali, Presidency College, Calcutta.*

Contents.

I.—Images of the Sixteen Sthaviras.
II.—A scroll illustrating the life and miracles of Buddha.
III.—A chart containing the charm of Vajrabhairava.

I. Images of the Sixteen Sthaviras.

[Read Feb. 1st, 1905.]

These images, which have been carved out of pieces of red sandalwood, are not like the ones which are available in the markets of Darjeeling or Kātamuṇḍu, or even in those of Lhasa. They are not images of Buddha, nor those of Chinese *Hoshangs* which are carved out of soap-stone by Chinamen and sold as curiosities; but they are unique examples obtained from a monastery near Gyantse during the late Tibet expedition. Image No. 5 was kindly lent to me by Mr. Buck of the Home Department (India), while images Nos. 15, 10, 3 and 9 were borrowed from Colonel Beynon, Assistant Military Secretary to the Commander-in-Chief. All these images are specimens of Chinese sculpture.

The images themselves are not more than two hundred years old, but they must have been copied from very old originals. All of them are of the same size, being $4\frac{1}{2}$ inches in length and nearly 3 inches in breadth. They are representations of five of the sixteen famous Buddhist saints who are called in Tibetan "Gnaṣ-bṛtan," in Pāli "Thera," and in Sanskrit "Sthavira," and who put on the *tri-cīvara* (three monkish robes) and sit on *Vajrāsana* or immoveable and imperishable diamond seats. Beneath the feet of the images there are inscriptions in Tibetan in letters of gold containing the names of the Sthaviras and formulæ of salutation. The five inscriptions with their romanized transcriptions and English translations are given below:—

No. 5.

འཕགས་ པ་ གནས་ བརྟན་ ཆེན་ པོ་ རྡོ་ རྗེ་ མོ་ ཡི་ བུ་ ལ་ ན་ མོ།

Ḥphagṣ-pa gnaṣ-bṛtan-chen-po ṛdo-ṛje-mo-yi-bu-la na-mo.

"Salutation to the noble great saint Vajrāyaṇī-putra."

No. 15.

འཕགས་ པ་ གནས་ བརྟན་ ཆེན་ པོ་ སྤེད་ བྱེད་ ལ་ ན་ མོ།

Ḥphagṣ-pa gnaṣ-bṛtan-chen-po sped-byed-la na-mo.

"Salutation to the noble great saint Gopaka."

No. 10.

འཕགས་ པ་ གནས་ བརྟན་ ཆེན་ པོ་ སྒྲ་ གཅན་ ཧྲྀདཿ་ ལ་ ན་ མོ།

H̱Phags-pa gnaṣ-ḇrtan-chen-po ṣgra-gcan-ḥdsin-la na-mo.

"Salutation to the noble great saint Rāhula."

No. 3.

འཕགས་ པ་ གནས་ བརྟན་ ཆེན་ པོ་ ནགས་ ན་ གནས་ ལ་ ན་ མོ།

H̱Phags-pa gnaṣ-ḇrtan-chen-po nagṣ-na-gnaṣ-la na-mo.

"Salutation to the noble great saint Vanavāsī."

No. 9.

འཕགས་ པ་ གནས་ བརྟན་ ཆེན་ པོ་ བ་ཀུ་ལ་ ལ་ ན་ མོ།

H̱Phags-pa gnas-ḇrtan-chen-po bā-ku-la-la na-mo.

"Salutation to the noble great saint Bākula."

Besides these five there are eleven[1] other images which too were brought from near Gyantse; but they are now with Colonel Waddell in England.

A short account of the Sixteen Sthaviras is given below:—

1. *Aṅgaṇika*—also called Aṅgiraja (Tib. Yan-lag-ḥbyuṅ)—belongs to the Kailāśa mountain, holds in his hands an incense-censer and a fly-whisk made of a yak's tail, and sits surrounded by a circle of one thousand and three hundred *arhats*.

2. *Ajita*—(Tib. Ma-pham-pa)—belongs to Rishi Parvata Guhā, bears his hands in *dhyānamudrā* (tranquil) attitude and sits surrounded by a circle of one hundred *arhats*.

3. *Vanavāsī*—(Tib. Nagṣ-na-gnaṣ)—belongs to Saptaparṇi Guhā, has two hands, one holding a fly-whisk of a yak's tail and the other with a pointed index finger, and sits surrounded by a circle of one thousand and four hundred *arhats*.

4. *Kālika*—(Tib. Duṣ-ldan)—belongs to Tāmralipti, wears a golden ear-ring and sits surrounded by a circle of eleven hundred *arhats*.

5. *Vajrāyaṇī-putra*—(Tib. R̲do-rje-mo-yi-bu)—belongs to Ceylon, possesses two hands, one of which has a pointing finger and the other holds a drum-stick, and sits surrounded by a circle of one thousand *arhats*.

---

1 In Chinese Buddhist books the saints or Sthaviras are named as follow:—

12. Piṇḍola (or Piṇḍola Bhāradvāja); 7. Kanakavatsa (or Svarṇavatsa); 8. Bhāradvāja (Kanaka?); 16. Supiṇḍa (Acala?); Nakula Bākula?); 6. Bhadra (or Bhadrika); 4. Kālika; 5. Vajrāyaṇīputra; 15. Sivaka (Gopaka?); 13. Handaka (Panthaku?); 10. Rāhula; 14. Nāgasena; 1. Iṅghata (Aṅgaṇika?); 3. Punarvasu (Vanavāsī?); 2. Ajita; and 11. Cūtahandaka (Cūtapanthaka?).

In Tibetan these sixteen saints are called G̲naṣ-ḇrtan; in Pali they would be called Thera and in Sanskrit Sthavira. The Tibetan word literally signifies a sage who is "firm in his position;" the Pali word denotes a monk who has passed a spotless life at least for ten years after admission into the priesthood; while the Sanskrit word is explained in Brahmanic books to signify one who is senior not in age but in knowledge. Thus Manu says:—

न तेन वृद्धो भवति येनास्य पलितं शिरः।
यो वै युवाप्यधीयान स्तं देवाः स्थविरं विदुः ॥ १५६ ॥

(*Manusaṃhitā*, Chap. II).

6. Bhadrika—(Tib. Bzaṅ-po)—belongs to Yamunā-dvīpa (probably the country watered by the Yamunā), holds one hand in the attitude preaching and the other in a meditative attitude, and sits surrounded by a circle of one thousand and two hundred *arhats*.

7. *Kanaka-vatsa*—(Tib. Gser-beḫu)—belongs to Kāśmīra, holds a string of precious gems, and sits surrounded by a circle of five hundred *arhats*.

8. *Kanaka-bhāradvāja*—(Tib. Bhā-ra-dvā-ja-gser-can)—belongs to Aparagodānīya, holds his hands in a meditative attitude and sits surrounded by a circle of seven hundred *arhats*.

9. *Bākula*—belongs to Uttarakuru, holds an ichneumon or mongoose in his hands, and sits surrounded by a circle of nine hundred *arhats*.

10. *Rāhula*—(Tib. Sgra-gcan-ḫdsin)—belongs to Priyaṅgu dvīpa, holds a precious crown and sits surrounded by a circle of eleven hundred *arhats*.

11. *Cūtapanthaka*—(Tib. Lam-phran-ḫrtan, literally "firm on the small road")—belongs to the Gridhrakūṭa hill, holds the hands in tranquil meditative posture, and sits surrounded by a circle of one thousand and six hundred *arhats*.

12. *Piṇḍola-bhāradvāja*—(Tib. Bhā-ra-dvā-ja-ḫsoḍ-sñoms-len)—belongs to Pūrva-videha, holds in his hands a book and an alms-bowl, and sits surrounded by a circle of one thousand *arhats*.

13. *Panthaku*—(Tib. Lam-ḫsten)—belongs to Trayastriṃśa devaloka, holds a book preaching religion, and sits surrounded by a circle of nine hundred (or, according to some Tibetan books, nineteen hundred) *arhats*.

14. *Nāgasena*—(Tib. Klu-yi-sde)—belongs to the king of mountains, Urumuṇḍa (Tib. ñoṣ-yaṅs), holds a vase and mendicant's staff, and sits surrounded by a circle of twelve hundred *arhats*.

15. *Gopaka*—(Tib. Sped-byed)—belongs to Parvatarāja Vihula, holds a book called *Prajñāpāramitā* in both hands, and sits surrounded by a circle of one thousand and four hundred *arhats*.

16. *Acala*—(Tib. Mi-phyed)—belongs to Parvatarāja Himālaya, holds a *bodhi-caitya* with both hands, and sits surrounded by a circle of one thousand *arhats*.

17. *Dharmāta*—In the list of Sthaviras the name of Dharmāta is also mentioned. He is described as an *Upāsaka* or devotee (Tib. Dge-bsñen) wearing his long hair in the shape of a turban, carrying a bundle of books on his back, and sitting before Amitābha as an attendant.

18. *Huo-shaṅ*—In in some Chinese books, Huo-shaṅ or Hvashang is included in the list of Sthaviras. He is described as a good-natured person holding a rosary in his right hand and a peach in his left, with little goblins playing around him.

These Sixteen Sthaviras were not contemporaries. Six of them, *viz.*, Aṅgaṇika, Ajita, Piṇḍola, Bākula, Bhadrika and Rāhula are mentioned in the canonical Pali Scriptures. The *Thera-gāthā* of the *Suttapiṭaka* contains some verses[1] which are

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[1] Aṅgaṇika is said to have chanted the following stanzas :—

अयोनिसुद्धिं अन्वेसं अग्गिं परिचरिं वने।
सुद्धिमग्गम् अजानन्तो अकासिं अमरं तपम् ॥ २१६ ॥

supposed to have been chanted by these six sthaviras. As the *Thera-gāthā* is believed to have been compiled at the time of the First Buddhist Council, these six sthaviras must have lived before the 5th century B.C.

तं सुखेन सुखं लद्धं पस्स धम्मसुधम्मतम् ।
तिस्सो विज्जा अनुप्पत्ता कतं बुद्धस्स सासनम् ॥ २२० ॥
ब्रह्मबन्धु पुरे आसिं इदानि खोऽम्हि ब्राह्मणो ।
तेविज्जो ह्मातको चम्हि सोत्थियो चम्हि वेदगू ति ॥ २२१ ॥
अङ्गणिकभारद्वाजो थेरो ॥

(*Theragāthā, Tikanipāta*).

Ajita thera is said to have chanted the following stanza :—

मरणे मे भयं नत्थि निकन्ती नत्थि जीविते ।
सन्देहं निक्खिपिस्सामि सम्पजानो पतिस्सतोति ॥ २० ॥
अजितो थेरो ।

(*Theragāthā, Ekanipāta*).

Piṇḍola (or Piṇḍola Bhāradvāja) chanted the following stanzas :—

न इदं अनयेन जीवितं नाहारो हृदयस्स सन्तिको ।
आहारट्ठितिको समुस्सयो इति दिस्वान चरामि एसनम् ॥ १२३ ॥
पङ्को ति हि नं अवेदयुं यायं वन्दनपूजना कुलेसु ।
सुखुमं सल्लं दुरुब्बहं सक्कारो कापुरिसेन दुज्जहो ति ॥ १२४ ॥
इत्थं सुदं आयस्मा पिण्डोलभारद्वाजो थेरो गाथायो अभासित्थाति ॥

(*Theragāthā, Dukanipāta*).

Bākula chanted the following :—

यो पुब्बे करणीयानि पच्छा सो कातुम् इच्छति ।
सुखा सो धंसते ठाना पच्छा चम् अनुतप्पति ॥ २२५ ॥
यञ् हि कयिरा तञ् हि वदे यं न कयिरा न तं वदे ।
अकरोन्तं भासमानं परिजानन्ति पण्डिता ॥ २२६ ॥
सुसुखं वत निब्बानं सम्मासम्बुद्धदेसितम् ।
असोकं विरजं खेमं यत्थ दुक्खं निरुज्झतीति ॥ बाकुल थेरो ॥

(*Theragāthā, Tikanipāta*).

The *Theragāthā* mentions two sthaviras named respectively, Bhaddiya and Bhadda, and it is not known whether our Bhadrika is identical with the first or the second. Bhaddiya chanted several stanzas (842-865) of which the last one runs as follows :—

सीलक्खन्धे पतिट्ठाय सतिं पञ्ञञ्च भावयं ।
पापुणिं अनुपुब्बेन सब्बसंयोजनक्खयन्ति ॥ ८६५ ॥
भद्दियो कालिगोधायपुत्तो ।

(*Theragāthā, Vīsatinipāta*).

Bhadda, too, chanted several stanzas (473-479), of which the last one is as follows :—

जातिया सत्तवस्सेन लद्धा मे उपसम्पदा ।
तिस्सो विज्जा अनुप्पत्ता अहो धम्मसुधम्मताति ॥ ४७९ ॥
भद्दो थेरो ।

(*Theragāthā, Sattanipāta*).

In the list of the sixteen Sthaviras the name of Nāgasena is found. Now, Nāgasena[1] who is a prominent figure in the well-known Pali work called Milindapañha, was a contemporary of Milinda. As king Milinda has been identified with the Greeco-Bactrian king Menander, Nāgasena must have lived in the second century B.C.

Another Sthavira included by some in the list of the sixteen is Dharmāta or Dharmatrāta[2] who was a maternal uncle of Vasumitra. Now, Vasumitra was one, if not the chief, of the 500 great *arhats* who formed the synod convoked by King Kanishka about 33 B.C. Dharmatrāta must, therefore, have lived about the 1st century B.C. In this way it can be shown that the sixteen sthaviras did not flourish simultaneously. The earlist of the Sthaviras lived about the 6th century B.C., while the latest of them are of the 1st century A.D.

The Sixteen Sthaviras were not born in the same country. Thus Aṅgaṇika came from the Kailāśa Mountain in the Himālayas, Vanavāsi came from Saptaparṇiguhā in Behar, Kālika came from Tāmralipta or Tumlook in Bengal, Vajrāyaṇiputra from Siṃhala or Ceylon, Kanakavatsa from Kāśmīra, Bākula from Uttarakuru or Eastern Turkestan, and so on.

Though thousands of sthaviras lived in Asia in the ancient days, these sixteen were

---

Rāhula chanted the following stanzas :—

उभयेनेव सम्पन्नो राज्जलभद्दोति मं विदु ।
यञ्च अम्हि पुत्तो बुद्धस्स यञ्च धम्मेसु चक्खुमा ॥ २९५ ॥
यञ्च मे आसवा खीणा यञ्च नत्थि पुनब्भवो ।
अरहा दक्खिणेय्योऽम्हि तेविज्जो अमतद्दसो ॥ २९६ ॥
कामन्धा जालसञ्छन्ना तण्हाछदनछादिता ।
पमत्तबन्धुना बद्धा मच्छा व कुमिनामुखे ॥ २९७ ॥
तं कामम् अहम् उज्झित्वा छेत्वा मारस्स बन्धनं ।
समूलं तण्हम् अब्बय्ह सीतिभूतोऽस्मि निब्बुतोति ॥ २९८ ॥
राज्जलो थेरो ।

(*Theragāthā, Catukkanipāta*).

Sīvaka, (Gopaka?) who is mentioned in the Chinese books as a thera and is described in Pali books as a novice-monk under Vanavacchat-thera, is said to have chanted the following stanzas :—

उपज्झायो मं अवचासि इतो गच्छामि सीवक ।
गामे मे वसति कायो अरञ्ञं मे गतो मनो ।
सेमानको पि गच्छामि नत्थि सङ्गो विजानतन्ति ॥ १४ ॥
वनवच्छस्स थेरस्स सामणेरो ॥

(*Theragāthā, Ekanipāta*).

(*Vide Theragāthā*, London Pali Text Society's edition).

1 *Vide* Nāgasenabhikṣu sūtra in Bunyiu Nanjio's Catalogue of the Buddhist Tripiṭaka, No. 1358. This sūtra, which was translated into Chinese, A.D. 317-420, seems to be a translation of a text similar to the Milindapañha, though the introductory part is not exactly the same as that of the Pāli text published by Dr. Trenckner in his Pāli Miscellany, part I, with English translation. *Vide* also Bunyiu Nanjio's Catalogue, Appendix I, No. 38.

2 For Dharmatrāta see Bunyiu Nanjio's Catalogue of the Chinese Tripiṭaka, Appendix I, No. 31.

specially remarkable for the purity of their character and for their exertions to elevate their brethren. They left family and children, cut off all worldly ties, and felt no attachment for anything here; yet at the same time worked as missionaries spreading with utmost zeal the religion of Buddha among the masses of the people.

It is probable that these sthaviras lived before the division of the Buddhist Church into Northern and Southern schools, but they are at present specially remembered and worsihipped by the Buddhists of the Northern School, *viz.*, by those of Tibet, China, Nepal, etc. Sthavira-worship was introduced from India into Khotan in the early centuries after Christ. From Khotan it spread to China and thence into Tibet. We read in Tibetan history (*e.g.*, *Pag-sam jon-zang*, pp, 329—330) that a certain prince of Khotan, who embraced Buddhism, was invited by the emperor Thezung of the Thang dynasty to the capital of China early in the 7th century A.D. He introduced into China a masque dance in which the Sixteen Sthaviras were represented.[1]

These Sthaviras were very well known in the head-quarters of Buddhism in the 7th and following centuries. Even at the present day the Tibetan monks daily recite the names of the Sixteen Sthaviras (*Gnaṣ-brtan-bcu-drug*). A fairly full account of them in Tibetan literature is given below:—

གནས་བརྟན་བཅུ་དྲུག[2]།

རྒྱལ་པོ་རྣམས་ཏེ་ཆོག་གིས་འདྲུབ། ལྷ་རྣམས་བསམ་པས་འགྲུབ་འགྱུར་ཞིང་། ཆུལ་ཁྲིམས་ལྡན་པ་སྨོན་པས་འགྲུབ། དེ་བཞིན་བསམ་གདོན་པ་རྣམས་ཀྱིས། སེམས་བསྐྱེད་པས་ཏེ་ཐམས་ཅད་འགྲུབ། ཞེས་དང་། རྒྱ་གར་དང་བོད་ཀྱི་བྱང་ཆུལ་མདོར་བསྡུས་ཀྱི་ན། བརྒྱ་པ་དང་པོ་ཚགས་པའི་མཇུག། གནས་པའི་མཚོ་བརྒྱམས་པ་མི་སྐྱེ་རྒྱའི་ཆེ་ལོ་

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[1] ཡང་སྐུ་སངས་རྒྱས་རྗེས་འོ་བཙུན་བཙུ་རྩོམ་ན་ཡུལ་མི་པའི་ཀཱ་རྱིས་ པོ་ཏེན་པའེ་སྡེ་སྐྱང་པའི་སྐབས་ཤ་ ཐྲོག་པའི་དཔའ་བའི་བཤེས་གཉེན་ཐྲི་དེཁས་བཙོད་དུ་ཁས་བཅེན་ཐྲི་ཚོ་རྒྱལ་ཁ་ཤུངས་ཤིང་ཤ་རྩ་བོ་རྟེ་འི་ཞལས་ཕྱི་ཐྲག་པའི་དཔའ་བའི་པཾ་ཆུང་ཞེག་ཤིས་དོན་ཐུབ་འཐུང་ལའང་དེ་ཁ་ཤུངས་པ་དང་ལི་ ཡུལ་ཐྲི་ཐྲལ་པོ་ས་ལ་རྒྱའི་བྱ་ཡི་ ཐུ་ལ་ཞས་པས་སྐྱན་རྡངས་དེ་མཇལ་ཞེང་ཐྲ་ཁ་ཐྲལ་པོ་ཕང་རྡོའི་ དས་ཐྲ་ ཁ་ ཐྲ་ཐྲ་ བཁ་རྩེ་ལ་དུ་ཐྲོག་ ཁས་དཐུར་ཁཁས་མཇད་རྩེས་འདེ་འབཁ་ལ་ཁཁས་བཁཾ་བརྒ་རྒྱ་ཤིས་ཐས་ཁཁས་ མཇད་ པ་ལ་ཕྱིས་ལུ་ བོད་ཁས་སྐུ་ མེས་འཐོད་ ཆུང་པས་མཇལ་དེ་ ཐིས་ཐུས་པ་ཐྲ་ ཁཁ་ཁས་སྐྱན་ ངདས་པའི་ ཁཡེར་ བའི་ཁཁས་ བཁཾ་བརྒ་རྒྱ་ཤི་ཕང་ཀ་ལ་དཔེ་ཐུས་དེ་ས་ ཐྱོལ་པུ་པ་སོོཁས་ ཐྱིས་བཞེངས་པ་ ལས་མཆེད་ པའེ་ སྐྱ་བཞེངས་ ཁས་དེའི་ ཕྱག་མཆོད་ཐྱང་ འདེའ་དའ་ཐྱིས་ཆ་ཞིང་མཆེམས་ཕམས་ཟད་མཐྱེན་པ་དང་སྒོ་གཁས་ཁཁེས་ཐྱི་དེའི་སྐ བ་ཡིཁ་ཁསྐམ་མཇོད་ལ།

(དཔག་བསམ་ལྗོན་བཟང་

Pag-sam-jon-zang, p. 330, edited by Rai Śarat Chandra Das Bahadur, C.I.E).

Śrījñāna Atiśa, about 1042 A.D., is said to have made some predictions about the Sixteen Sthaviras at Snarthang in Tibet. So we read:—

སྐར་ཕད་ཀི་ཡུད་བཤ་ཇོ་ བོས་ཁཁས་བཤཁ་བཏུ་ རྒྱ་ཁཞེཁས་ ཕིང་ ལུད་ བསྐྱ་པའི་བཁཨ་ ཁདམས་པའེ་སྡེ་དཔལ་ སྐར་ ཕད་ དཁོཁ་ཅེ་བཁཨ་ ཁདམས་ སྒཁས་ བཁམ་དུ། དཔལ་ཆོས་ཐྱི་ ཕད་ཞེས་ ཐཁས་པ་ ཐྱང་།

(*Pag-sam-jon-zang*, p. 329, Rai Sarat Chandra's edition)

[2] (Gyaḥ-gsel ཁཡཨ་ཁསེལ་) Compiled from *Sde-srid-saṅs-rgyas-rgya-mtsho*. *Vide* also *Mdsad-brgya* (མཇད་བཐྱ) by Lama Tārānātha; Tārānātha's *Indian Buddhism*; Waddell's *amrism*, pp. 376-78.

བརྒྱད་ཁྲི་ཐུབ་བའི་ཚོ་སྐབས་སུ་བསྐལ་བཟང་སངས་རྒྱས་སྟོང་གི་ཐོག་མར། སངས་རྒྱས་འཁོར་པ་འཇིགས་བྱེད། ཁྲི་ཁྲིའི་སྐབས་སུ་གསེར་ཐུབ་བྱོན། ཅི་ཁྲིའི་སྐབས་སུ་འོད་སྲུང་བྱོན། །ཚེ་ལོ་བརྒྱ་བའི་དུས་སུ་བདག་ཅག་གི་སྟོན་པ་ཤཱཀྱ་ཐུབ་པ་ཕེབས་བའོ།། ཡབ་རྒྱལ་པོ་ཟས་གཅང་ལ་སྐུ་མཆེད་བཞི་ཡོད་དེ། ཟས་དཀར་ཟས། བྲེའུ་ཟས། བདུད་རྩི་ཟས། ཟས་གཙང་དང་བཞི། ཟས་དཀར་ཟས་ཀྱི་བུ་རྒྱལ་པ་དང་། བཟང་སྐྱེན། བུ་མོ་དཀར་མོ་གསུམ། བྲེའུ་ཟས་ཀྱི་བུ་ཤཱཀྱའི་མིང་ཅན་དང་། འཕགས་པ་མ་འགག་པ། བུ་མོ་བྲེའུ་མ་དང་གསུམ། བདུད་རྩི་ཟས་ཀྱི་བུ་ཉན་ཐོས་ཀུན་དགའ་པོ་དང་། དགེ་སློང་ལྷས་སྦྱིན་དང་། བུ་མོ་བདུད་རྩི་མ་དང་གསུམ། ཟས་གཙང་མ་ལ་གྲོང་ཁྱེར་ལྷས་བསྟན་གྱི་ཤཱཀྱ་ལེགས་པ་རབ་སད་ཀྱི་བུ་མོ་སྤྲུན་གཉིས་བཙུན་མོར་ཟླངས་པས། བཙུན་མོ་ཆེ་བ་སྐྱེ་ཏྲའི་བདག་མོ་ལ་ཉན་ཐོས་མཛོས་དགའ་འཁྲུངས། བཙུན་མོ་ཆུང་བ་སྐྱ་འཐུལ་ལྷ་མོ་ལ། བདག་ཅག་གི་སྟོན་པ་མཉམ་མེད་ཤཱཀྱའི་རྒྱལ་པོས་སྐུ་འཐུལ་ལྷ་མོའི་མཚན་ཁྲངས་གསལ་ཁས་སྐུ་བལྟམས་བའི་ཚོ་དེ་དང་། དུས་མཉམ་དུ་གཉིས་ཁ་ཕྲལ་བརྒྱ། དེའི་ཕྲལ་བཀྱོ་ ཁྱུ་མཆོག་ལྡན་བརྒྱ ཤཱཀྱའི་བུ་ཕྲལ་བརྒྱ།། རྒྱལ་པོ་ཚེན་པོ་བཞི་ལ་སྲས་བཞི་འཁྲུངས་ཏེ། ཡུལ་དབུས་མ་ཁ་དྲུ་ན་རྒྱལ་པོ་གཟུགས་ཅན་སྐྱིང་པོ། མཉན་ཡོད་ཀོ་སལ་ན། རྒྱལ་པོ་གསལ་རྒྱལ། གྲོང་ཁྱེར་འཕགས་རྒྱལ་ན་རྒྱལ་པོ་གཏུམ་པོ་རབ་སྐང་། ཀོའུ་ཤཱམྦྷི་ན་བད་ས་ལའི་རྒྱལ་པོ་འཚར་བྱེད་དམ་ཤད་པ་བཞི་འཁྲུངས་སོ། རྒྱལ་པོ་ཤད་བའི་རྒྱལ་ཙནས་ལྷ་ན་བུ་མཚན་ལྡས་ལེགས་བར་མ་མཐོང་ནས་སྐྱོམ་དུ་བཙུག་ནས་ཆུ་ལ་སྐྱེར་བདུང་བས། ཆུ་འབྲམ་ཞིག་དུ་རྒྱ་གར་བའི་ཞིང་པ་ཁ་ཤས་ཀྱིས་རྟེད་དེ་ཁ་ཐེ་ནས་བྱུང་བའི་རྒྱལ་བུ་ཡབ་རྒྱལ་པོ་འི་མཛད་སྤྱོད་ལ་སྐྱོ་སྟེ། རང་གི་ཁྱིམ་དུ་མ་སོང་བར་འཁྲུམས་ཏེ་ལོ་མང་དུ་སོང་བའི་མཐར་བོད་དུ་ཕྱིན་ཏེ་རྩེས་གང་གི་ཉི་སྐོར་ལྟ་རི་ཡེལ་པོ་འམ་རོལ་པོའི་རི་ལ་སྤེལནས་པ་ན། ཕུག་ཤ་རྩེ་རམས་ཀྱི་རྟེད་དེ་བལྟ་བས་མི་དོམ་བའི་གཟུགས་ལ་ཤིན་དུ་ཡ་མཚན་དེ་གཉའ་བ་ལ་ཁྱི་བཏེག་བྱས་ནས་ཁྱིམ་དུ་གདན་དྲངས་དེ་རྒྱལ་པོར་བསྐོས་པས་པོད་ཆོས་རྒྱལ་ གདུང་རྒྱང་རྒྱ་གར་ནས་ཐོག་མ་གཉའ་ཁྱི་བཙན་པོ་ལགས། ཡང་ཟས་གཙང་ལ་བུ་མོ་བཞི་ཡོར་བའི། བུ་མོ་གཙང་མའི་སྲས་ལེགས་པ་རབ་སད། བུ་མོ་དཀར་མོའི་སྲས་སུ་ཐྲེང་བ་ཅན། བུ་མོ་བྲེ་མོའི་སྲས་སུ་བཟང་ལྡན། བུ་མོ་བདུད་རྩི་མའི་སྲས་སུ་དགེ་འཕེལ་དེ། རྒྱལ་པོ་གཞོན་ནུར་གྱུར་ཚ་པོ་བཞི་འོ། མཉམ་མེད་ཤཱཀྱ་རྒྱལ་པོ་དེས་དགུང་ལོ་ཉིར་དགུའི་བར་རྒྱལ་སྲིད་བཟུང་སྟེ། བཙུན་མོ་ས་འཆོ་མས་གཙང་མའི་སྲས་སུ་ཐྲེང་བ་ཅན། བཙུན་མོ་རྒྱལ་མཚན་ཅན་གྱི་སྲས་སུ་ཤཱཀྱ་ཐུབ་པ་ཅན། བཙུན་མོ་ཤི་དཔག་སྐྱེས་ཀྱི་གཅོ་ཚ་པོ་བཞི་ཡོད་དེ། མཉམ་མེད་ཤཱཀྱ་རྒྱལ་པོ་དེས་དགུང་ལོ་ཉིར་དགུའི་བར་རྒྱལ་སྲིད་བཟུང་སྟེ། བཙུན་མོ་ས་འཆོ་མས་གཙང་མའི་སྲས་སུ་ཐྲེང་བ་ཅན། བཙུན་མོ་ཤི་དཔག་སྐྱེས་ཀྱི་གཅོ་ཚ་པོ་བཞི་ཡོད་དེ། ཤཱཀྱ་ཐུབ་པ་ཕེབས་བཀའ་བསྩལ་ནས། བཙུན་མོ་གྲགས་འཛིན་རྣམས་གཅོས་ཏེ་ཁྱི་ བཙུན་མོ་རི་དྭགས་སྐྱེས་ཀྱི་གཅོས་ཏེ་ཁྱི་སྟེ། །བཙུན་མོ་དྲུག་ཁྱི་ཁབ་དུ་བཞེས་པས། བཙུན་མོ་གྲགས་འཛིན་མ་ལ་གནས་བརྟན་སྐྱ་གཅན་འཛིན་བྱུང་། དེ་ནས་སངས་རྒྱས་ བཅོམ་ལྡན་འདས་ཀྱི་སྐུ་ལ་ཤ་དམ་བའི་ ཆོས་སྐྱེད་ཞིང་ལྷ་མི་ཀུན་གྱི་བསོད་ནམས་ཀྱི་དཔལ་ཞིང་བཀའ་ལུང་སྲིད་ཁ་ཐེ་ནས་ཤཱཀྱ་ཐུབ་པས་བཀའ་བསྩལ་ཏེ། རྒྱ་དཀར་ལས་མི་འདའ་བར་འཛིག་རྟེན་ན་མདོར་སྡུམ་དུ་བཞུགས་ཤིང་ བཀའ་ལུང་གི་རྩེས་སུ་སྐྱབ་པས་འཕགས་བའི་ཆོག་དེས་པོ་ཆེའི་བྱོག་ཞུ་བསྐྲུན་པ། ཡུལ་ཀེ་ཥི་ཡཱ་ཏྲིཡ་གྲོང་ན་འཕགས་ཀླུ་སྒྲུབ་ཀྱི་ཐུགས་ཀར་ཞུགས་པ། འཁོར་དབུ་བཅོས་པ་སྟོང་དང་ཆེག་བཏུས་བསྐོར་ཏེ་བཞུགས། གང་སར་རི་ཆེན་པོ་དེ་སེ་ལ་འཕགས་པ་གནས་བརྟན་ཡན་ལག་འབྱུང་། ཕུག་གཉིས་སྟོས་ཐོར་རྡ་ཡབ་འཇོག།

འཁོར་དག་བཅོམ་སྡེང་དང་སུམ་བརྒྱས་བསྐོར་ཏེ་བཞུགས། དྲང་སྲོང་རི་ཡི་དོགས་ནགས་ན་འཕགས་བའི་གནས་བརྟན་མ་ཐམ་པ། ཕྱག་གཉིས་མཉམ་གཞག་ཕུག་རྒྱ་མཐོང་། འཁོར་དག་བཅོམ་པ་བརྒྱ་ཕྲག་གཅིག་གིས་བསྐོར་ཏེ་བཞུགས། རི་ནགས་ཀྱི་དོགས་ལོ་མ་བདུན་བའི་རི་ཕུག་ན་འཕགས་པའི་གནས་བརྟན་ནགས་ན་གནས་ཞེས། ཕྱག་གཉིས་སྤྲིགས་མཛུབ་ཐུབ་པ་འདུག་ཅིང་། འཁོར་དག་བཅོམ་སྡེང་དང་བཞི་བརྒྱས་བསྐོར་ཏེ་བཞུགས། འཇམ་བྱ་གླིང་གི་ཟངས་གླིང་ན། འཕགས་བའི་གནས་བརྟན་དུས་ལྡན་ཟེར། ཕྱག་གཉིས་གསེར་རྒྱ་རྣ་སྐོར་འཇིག། འཁོར་དག་བཅོམ་སྡེང་དང་ཆིག་བརྒྱས་བསྐོར་ཏེ་བཞུགས། སིང་གླ་ལ་ཡི་གླིང་ན་ནི། གནས་བརྟན་རྡེ་རྗེ་མོ་ཡི་བྱ། ཕྱག་གཉིས་སྤྲིགས་མཛུབ་ཐུབ་འཇིག། འཁོར་དག་བཅོམ་སྡེང་ཕྱག་གཅིག་གིས་བསྐོར་ཏེ་བཞུགས། ཆུ་པོ་ཡ་སུ་ནའི་གླིང་ན། འཕགས་པ་གནས་བརྟན་བཟང་པོ། ཕྱག་གཉིས་ཆོས་འཆད་མཉམ་གཞག་མཛད། འཁོར་དག་བཅོམ་སྡེང་དང་ཉིས་བརྒྱས་བསྐོར་ཏེ་བཞུགས། གནས་མཆོག་ཁ་ཆེའི་ཡུལ་ན་ནི། འཕགས་པ་གནས་བརྟན་གསེར་བའུ། ཕྱག་གཉིས་རིན་ཆེན་ཞགས་པ་འཇིན། འཁོར་ནི་དག་བཅོམ་ཆེན་པོ་ལྔ་བརྒྱས་བསྐོར་ཏེ་བཞུགས། ནུབ་ཀྱི་བ་ལང་སྤྱིད་གླིང་ན། བྲ་ར་ད་ཛ་གསེར་ཅན་མཆོག ཕྱག་གཉིས་མཉམ་གཞག་མཛད་པ་ལ། འཁོར་དག་བཅོམ་ཆེན་པོ་བདུན་བརྒྱས་བསྐོར་ཏེ་བཞུགས། བྱང་གི་སྒྲ་མི་སྐྱན་ན་ནི། འཕགས་པ་གནས་བརྟན་པ་ཀུ་ཛེས། ཕྱག་གཉིས་ནེའུ་ལེ་འཇིན་པ་དང་། འཁོར་ནི་དག་བཅོམ་དག་བརྒྱས་བསྐོར་ཏེ་བཞུགས། བྱ་ཚོད་ཕྱང་པོའི་རི་པོ་ལ། འཕགས་པ་གནས་བརྟན་ལམ་ཕྱན་བརྟན། ཕྱག་གཉིས་མཉམ་མཛད་པ་དང་། དག་བཅོམ་སྡེང་དང་དྲུག་བརྒྱས་བསྐོར་ཏེ་བཞུགས། ཤར་གྱི་ལུས་འཕགས་གླིང་ན་ནི། བྲྀ་ར་དྲ་ཛ་བསོད་སྙོམས་ལེན། ཕྱག་གཉིས་གླིགས་བམ་ལྷུང་བཟེད་འཇིན། དག་བཅོམ་སྡེང་ཕྱག་གཅིག་གིས་བསྐོར་ཏེ་བཞུགས། ལྷའི་གནས་སུམ་ཅུ་རྩ་གསུམ་ན། ཕྱག་གཉིས་གླིགས་བམ་ཆོས་འཆད་མཛད། དག་བཅོམ་ཆེན་པོ་དག་བརྒྱས་བསྐོར་ཏེ་བཞུགས། རི་ཡི་རྒྱལ་པོ་ངོས་ཡངས་ལ། འཕགས་པ་གནས་བརྟན་ཀླུ་ཡི་སྡེ། ཕྱག་གཉིས་བྱམ་པ་འཁར་གསིལ་འཇིན། དག་བཅོམ་སྡེང་དང་ཉིས་བརྒྱས་བསྐོར་ཏེ་བཞུགས། དི་ཡི་རྒྱལ་པོ་བི་དུ་ལང་། འཕགས་པ་གནས་བརྟན་སྡིད་བྱིད་ནི། ཕྱག་གཉིས་གླིགས་བམ་འཇིན་པ་དང་ དག་བཅོམ་སྡེང་དང་བཞི་བརྒྱས་བསྐོར་ཏེ་བཞུགས། གངས་ཅན་རི་ཡི་རྒྱལ་པོ་ལ། འཕགས་པ་གནས་བརྟན་མི་བྱེད་པ། ཕྱག་གཉིས་བྱང་ཆུབ་མཆོད་རྟེན་འཇིན་པ་དང་། དག་བཅོམ་སྡེང་ཕྱག་གཅིག་གིས་བསྐོར་ཏེ་བཞུགས། འཕགས་པ་གནས་བསྟན་དྲྀཾ་དྲ། སྐང་བ་མཐའ་ཡས་མདུན་ན་བཞུགས། རལ་བའི་ཐོད་བཅིངས་གླིགས་བམ་འཁྱུང་། ཕྱག་གཉིས་ཏ་ཡབ་བྱམ་པ་འཇིན། བདེ་བ་ཅན་ནས་གཟིགས་ལ་བཞུགས། མཛད་པ་རེ་རེ་ཞུ་ནི་ནི། བདེ་བར་གཤེགས་བའི་ཆོས་ཀྱི་རྒྱལ་སྲིད་གང་། ཉམས་པ་མེད་པར་ལེགས་བཟུང་ཐོགས་བཅུ་ཡི། དགེ་འདུན་སྡེ་རྣམས་དར་ཞིང་རྒྱས་མཛད་བའི། སྲས་མཆོག་འཕགས་པ་སྒྲ་གཅན་འཇིན། བཅོན་འགྲུས་མཐུ་ཡིས་སྐད་ཅིག་གཅིག་ཉིད་ལ། ཡེ་ཤེས་རྡེ་རྗེའི་སྡོབས་བརྟེས་འཇོག་གས་ལ། ལྷ་བའི་རི་ཁོ་མ་ལྷས་མཐར་བསྟིལ་བའི། ནུབ་ཀྱི་བ་ལང་སྤྱིད་གླིང་ན། བྲ་ར་དྲ་ཛ་གསེར་སྟེམས་ལེན། ལྷའི་གནས་སུམ་ཅུ་རྩ་གསུམ་ན། ཕྱག་གཉིས་ཏིང་འཛིན་བཞག་ཐུགས་ཁ་དོག་ལང་། འཕགས་པ་གནས་བརྟན་ཕྱུག་ཡི་སྡེ། ཕྱག་གཉིས་བྱམ་པ་འཁར་གསིལ་འཇིན། དག་བཅོམ་སྡེང་ཕྱག་གཅིག་གིས་བསྐོར་ཏེ་བཞུགས། ཤར་ཕྱོགས་ཀྱི་ཨུ་རུ་ཝེ་ལ་ཀ་ཡི་ཁུལ་ན། འཕགས་པ་གནས་བརྟན་ཀ་ནཀ་ཨ་ཧ་ར། ཕྱག་གཉིས་ཏིང་འཛིན་བཞག་ཐུགས་ཁ་དོག་ལང་།

བཞུགས་ཀྱང་གཡེང་བ་མེད་པར་ཆོས་ཐམས་ཅད། མཉམ་པ་ཉིད་དུ་སྟོན་བའི་བླ་གས་བམ་འཆང་། འཕགས་པ་གནས་བརྟན་ལམ་བརྟན་གསུང་། ངོས་ཡངས་རི་པོའི་ངོས་ལ་གདེངས་ཅན། གཙུག་གི་ཧོར་བུའི་ཁྲི་ལ་ཞབས་བརྟེན་ནས། བསིལ་བྱེད་སྐྱ་དབྱངས་འབྲོལ་པས་སྲིད་མཆོ་འགྲོ། འདྲེན་མཛད་གནས་བརྟན་ཀླུ་ཡི་སྡེ། ཁམས་གསུམ་ཀུན་ལ་འདོད་ཆགས་བཅ་པ་ཡི། དགྲ་བཅོམ་ཟགས་པ་ཟད་བའི་ཡེ་ཤེས་སྟོབས། མཚྭངས་མེད་དམ་བའི་ཆོས་ཀྱི་བློགས་བམ་འཆང་། འཕགས་པ་གནས་བརྟན་སྒེད་བྱེད་པ། ཟླ་བའི་ཁང་བཟང་ལྟ་བུར་རབ་བསིལ་བའི། གངས་ཅན་ས་འཛིན་མདོག་མཐོན་ཟད་པར་མེའི། འོད་འཕྲོ་བའི་པར་འཆོ་ཞིང་མཆོད་སྟོང་ཆེ། འཛིན་བྱེད་གནས་བརྟན་མི་ཟེད་པ། ཤེས་དུ་བསིལ་བའི་མེ་ལས་ཡོངས་འཐུབས་དེ། སྲིད་བའི་ཆུ་ཏོ་མ་ལུས་བསྲེག་མཛད་པ། ཚུལ་ཁྲིམས་དྲི་བཟང་འཕྲལ་བའི་སྤྲོས་ཀྱི་སྤྲིན། འཕྲོ་མཛད་གནས་བརྟན་ཡན་ལག་འབྱུང་། རྟག་ཏུ་རྣམ་པར་གཡང་བའི། དིང་ངེ་འཛིན་ལ་མཉམ་པར་བཞག་པ་ཡི། ཟབ་མེད་ཡེ་ཤེས་མཐུ་ཡི་འགྲོ་བ་རྣམས། སྒོལ་མཛད་གནས་བརྟན་མ་ཐམས་པ། སྲིད་པ་སྐྲངས་ཀྱང་སྲིད་བའི་ནགས་རྩང་དུ། གནས་ནས་སྐྱིང་རྡེའི་རྡ་ཡབ་བླ་པ་ལྟར། བསིལ་པས་ཉོན་མོངས་ཚ་གདུངས་སེལ་མཛད་བའི། འཕགས་པ་གནས་བརྟན་ནགས་ན་གནས། རང་ཉིད་ཞི་བའི་བདེ་ལ་མི་ཞེན་པར། སྲིད་པར་གསེར་གྱི་རྣ་ཀྱིན་བྲོལ་བའི་སྐྱས། འགྲོ་པ་མ་རིག་གཉིད་ལས་སྐྱོང་མཛད་བའི། འཕགས་པ་གནས་བརྟན་དུས་ལྷག་ལས། མེ་ཏོག་གཞུ་ཅན་བྲས་བའི་དབྱང་མ་ལུས། འཇུག་མེ་བསྟིགས་པས་རྣམ་པར་མ་གྲང་བྱེད་བའི། མཐུ་ལྷན་རྩེ་འཛུལ་བས་ཕྱིས་མི་ཁྲལ་བའི། གནས་བརྟན་དེ་རྩེ་མོ་ཡི་བྱ། ཡ་སྐུ་ན་ཡི་བྲིང་ན་བཞུགས་མོད་ཀྱང་། མདོན་བར་ཤེས་པའི་དབང་པོ་ལྡ་ལྷན་པས། འགྲོ་བའི་ཁམས་དང་བསམ་བའི་བྱེ་བྲག་བཞིན། འདུལ་མཛད་གནས་བརྟན་བཅང་པོ་ཟེར། ཚགས་བྱལ་བདེ་བའི་བདུད་རྩིས་ཐྱགས་བརྟས་ཀྱང་། འགྲོ་ལ་བརྩེ་བའི་ཐུགས་རྗེའི་ཞགས་པ་ཅན། གྱང་གྱམ་ཀྱིས་པའི་ལྷོངས་ནུ་བདེར་འཆོ་བའི། བསྟགས་འོས་གནས་བརྟན་གསེར་བེའུ། བསོད་ནམས་སྟོབས་ཀྱི་སྐྱེས་པ་ལྟ་བ་ལྟར། དཀར་བའི་གྲགས་པས་ཀུན་ཏུ་ཁྱབ་པ་ཡང་། ཀུན་དུ་དགའ་བར་མཛད་བའི་དགྲ་བཅོམ་པ། བྱ་ར་ཀྲ་ཙ་གསེར་ཅན་མཆོག། བ་ཀུ་ལ་ཡི་ཚལ་ནང་ལྷས་མཆོད་ཀྱང་། ལྷ་རྗེས་གོས་ལ་སྲེད་བྱལ་ཤིང་ཤུན་ཅན། རིག་ཆེན་སྐྱ་ཆོགས་སྐུགས་བའི་ནོའུ་ལེ། འཕགས་པ་གནས་བརྟན་བ་ཀུ་ལ། སྐྱིང་རྡེའི་རྡ་ཡབ་བསིལ་པས་འབྲོལ་པ་རྣམས། ལས་ཉོན་དུག་གི་ཚ་པ་ཞི་བྱེད་ཅིང་། དགེ་བསྐྱེན་ཆུང་མཆོག་ཅོགས་བསྐྱེན་བཀུར་བའི། དགེ་བསྐྱེན་དྲྭ་རྡ་ཡི་ལགས། དོ་བོ་སངས་རྒྱས་སྐྱང་སྤྲངས་རྟོགས་ཡོངས་སུ་རྫོགས། མཐོད་པ་བྱང་སེམས་གཞན་དོན་རྩལ་ཆགས། རྣམ་པ་ཉོན་ཐོས་རྒྱས་བཏབ་དོའི་ཚེ། ཆོས་ཀྱི་ཕྱག་རྒྱ་ཐམས་ཅད་ཤེས་པ་ཡི། ཐུབ་པ་ཡབ་ལྗོངས་སུ་གྲགས

II.

A Scroll illustrating the Life and Miracles of Buddha.

[Read July 5th, 1905.]

This is a Tibetan scroll which was brought from a monastery near Gyantse during the late Tibet expedition. It was kindly forwarded by the Hon. Sir A. T. Arundel, Home Member, Government of India, to our esteemed Philological Secretary, Dr. E. D. Ross, who exhibited it in the meeting of the Asiatic Society held in July, 1905.

It contains representations of some of the principal scenes from the life of Buddha. There must have been three other scrolls to depict other scenes. On the back is written གཡས་ " gyaṣ " which shows that this scroll was used to be attached to the wall on the right-hand side. The mystic formula ཨོཾ་ ཨཿ ཧཱུྃ " oṃ-a-huṃ," which possesses the power of transforming the ten impurities into nectar, is also thrice repeated to secure spiritual gifts for the votary.

On the front side, at the top, is Amitābha the Buddha of Infinite Light. He resides in the abode of bliss called the Sukhāvatī heaven, in the western part of the firmament where the sun daily rises and disappears in all his glory.[1] In the centre on the front side is Buddha S'ākyasiṃha in meditation. Round him there are depicted various scenes from his life, with an inscription under almost every scene. There are no fewer than 41 inscriptions, which are noticed below :—

I.

1. Original— བཅོམ་ལྡན་ འདས་ ཉན་ ཐོས་ དང་ བཅས་ དེ་ མདུན་ གྱི་ སྲིད་དུ་ ནམ་

Transcription—Bcom-ldan-hdaṣ ñan thoṣ daṅ-bcaṣ te-mdun-gyi sriḍ-du nam-

མཁའ་ ལ་ བཞུགས་ པ།

mkhaḥ-la bshugṣ-pa.

Translation—The Blessed One (*i.e.*, Buddha) with his devotees staying yonder in the sky arrayed in lines.[2]

II.

2. Original.— ཚངས་ པའི་ ཆོས་ སྐོར་ བ་ གསོལ་ བ།

Transcription.—Tshaṅ-paḥi choṣ-ṣkor-wa gsol-wa.

Translation.—Brahma's request (to Buddha) to preach religion.

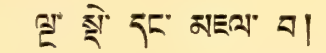
Explanation.—In the fifth week after the attainment of Buddhaship, the Blessed One stayed at the foot of the Ajapāla banyan tree. He thought: " I have attained the truth which is profound, difficult to perceive and to understand, which brings quietude of heart, which is exalted, which is unattainable by reasoning, abstruse, intelligible only to the

[1] The invention of Amitābha is generally ascribed to the Indo-Scythians, who were sun-worshippers and were very powerful under Kanishka about 33 B.C.

[2] Original རྣམ་ཀ་བཟང་ཕྱི་སྡིད་ ..... བཞུགས་པ།

wise. The people of the world, on the other hand, are given to desire, intent upon desire, delighting in desire. My doctrine will not be easy to understand to beings that are lost in lust and hatred. Let me therefore remain in quiet and not preach the doctrine." Then the four-faced Brahma understanding by the power of his mind the reflection which had arisen in the mind of the Blessed One, thought: "If the Blessed One remains in quiet and does not preach the doctrine, alas! the world perishes! alas! the world is destroyed!" Then Brahma with hands folded approached the Blessed One saying: "May the Lord preach the doctrine, may the Blessed One preach the doctrine, may the Perfect One preach the doctrine; there are beings whose mental eyes are not yet darkened by any dust; if they do not hear the doctrine, they cannot attain salvation; therefore, may the Spotless One open the door of Immortality."[1]

III.

3. Original.— 

Transcription.—Lṅa-ṣde daṅ mjal wa.

Translation.—Visiting the group of five (Brāhmans).

Explanation.—The Blessed One thought: "To whom shall I preach the doctrine first? Who will understand this doctrine easily?" After a long deliberation he went forth to Benares at a place called Deer Park, where he met with the five Brāhmans who had been his associates while he had practised meditation under the Bodhi tree in Gayā. The Blessed One addressing these five Brāhmans said: "Give ear, O *Bhikkhus*, the Immortal has been won by me; I will teach you; to you I preach the doctrine. If you walk in the way I show you, you will, ere long, have penetrated to the truth, having yourselves known it and seen it face to face; and you will live in the possession of that highest goal of holy life, for the sake of which noble youths fully give up the world and go forth into the houseless state." Then the Blessed One explained to these five *Bhikkhus* the doctrine of the Noble Eightfold Path which leads to insight, which leads to wisdom, which conduces to calm, to knowledge, to the full enlightenment, to Nirvāṇa. The Noble Eightfold Path consists of Right Perception, Right Aspiration, Right Speech, Right Conduct, Right Means of Livelihood, Right Endeavour, Right Memory, and Right Meditation. Along with these the Blessed One also expounded the doctrine of four noble truths, *viz.*, (1) sorrow, (2) origin of sorrow, (3) extinction of sorrow, and (4) the path leading to the extinction of sorrow.

The five Brāhmans, to whom Buddha preached the doctrines of the Noble Eightfold Path and the Four Noble Truths, were at first full of conceit. Seeing the Blessed One coming from afar, they concerted with each other saying: "Friends, there comes Buddha, who lives in abundance, who has given up his exertions, and who has turned to an abundant life. Let us not salute him, nor rise from our seats when he approaches, nor take his bowl and his robe from his hands. But let us put there a seat; if he likes, let him sit down." But when the Blessed One gradually approached near unto those five Brāhmans, they could not keep their agreement. They bowed down to him in reverence with hands folded and went forth to meet him. His calm tranquil appearance subdued them.[2]

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[1] Vide *Mahāvagga*, Khandhaka I, sect. 5 (S.B.E.S).

[2] *Mahāvagga*, Khandhaka I, sect. 6 (S.B.E.S).

IV.

4. Original.— ཀུན་ ཏུ་ རྒྱུ་ ཉེ་ ཞྭོ་ དང་ མཇལ་ བ།

Transcription.—Kun-tu-rgyu ñe-ẖgro daṅ mjal-wa.

Translation.—Meeting with the wandering ascetic Upaka.

Explanation.—While Buddha was going to Benares from Gayā he met on the road a wandering ascetic (*parivrājaka*) called Upaga or Upaka of the Ājivaka sect. The latter said to the Blessed One: "Your countenance, friend, is serene; your complexion is pure and bright. In whose name, friend, have you retired from the world? Who is your teacher? Whose doctrine do you profess?" The Blessed One replied: "I have overcome all foes; I am all-wise; I am free from stains in every way; I have left everything; and have obtained emancipation by the destruction of desire. Having myself gained knowledge, whom should I call my master? I have no teacher; no one is equal to me; in the world of men and of gods no being is like me. I am the Holy One in this world, I am the highest teacher, I alone am the absolute Sambuddha; I have gained coolness by the extinction of all passion and have obtained Nirvāṇa. To found the Kingdom of Truth, I go to the city of Benares; I will beat the drum of the Immortal in the darkness of this world."[1]

V.

5. Original.— འཁོར་ ལྔ་ སྡེ་ ལ་ ཆོས་ ཀྱི་ འཁོར་ ལོ་ སྐོར་ བ།

Transcription.—Ḫkhor-l̤ṅa sde-la chos-kyi ẖkhor-lo-skor-wa.

Translation.—Turning the Wheel of Law (or founding the Kingdom of Righteousness) before the five disciples.

Explanation.—The Blessed One first preached his religion at Benares in the Deer Park. Thus the Kingdom of Righteousness was first founded there. Besides the five Brāhmans, a rich treasurer named Yasa was converted to Buddhism at Benares. Afterwards the friends of Yasa followed. In the course of a few days fifty lay disciples became followers of Buddha there.

VI.

6. Original.— རྒྱལ་ པས་ གཙང་ སངས་རྒྱས་ ལ་ གཟིགས་ སུ་ ཕེབས་ པ།

Transcription.—Rgyal-pas gtsaṅ saṅs-rgyas-la gzigs-su phebs-pa.

Translation.—King S'uddhodana comes to see Buddha.

Explanation.—S'uddhodana was King of Kapilavastu (round Nigliva in the Nepal Terai), and father of Buddha. At the request of his father Buddha arrives at Kapilavastu and stops on the banks of the Rohita near the city. S'uddhodana with a large retinue goes to meet with him there. He sends at first several messengers to him at Rājagṛha begging him to come to Kapilavastu. But listening to the discourse of Buddha they entered the order,

[1] Vide *Mahāvagga*, Khandhaka I, sect. 6 (S.B.E.S.).

and came back no more to the King. Lastly, the Lord out of reverence for (or rather kindness to) his father went forth to Kalipavastu to grant his request.[1]

VII.

7. Original— རྒྱལ་པོ་ གསལ་ རྒྱལ་ ལ་ གཤོན་ནུ་ དཔེའི་ མདོ་ གསུང་ པ།

Transcription.—Rgyal-po-gsal-rgyal-la gshon-nu dpeḥi mdo gsuṅ-pa.

Translation.—Addresses to Rājā Prasenajit the sermon on "Comparisons of Young Men"

Explanation.—King Prasenajit of Kośala (Oudh) having heard that the Blessed One was at Rājagṛha in the Jetavana, visited him, and asked him how he could possibly pretend to be a Buddha when such old and respected sages as Pūraṇa Kāśyapa, Maskarī Gośāla, Sañjaya Vairaṭṭhi Putra, Ajita ¡Keśakambala, and others did not even lay any claim to this title. Then the Buddha preached to him the sermon of the Comparisons of Young Men with Old Men (*Kumāra-dṛṣṭānta sūtra*), by which the King was converted.[2]

VIII.

8. Original.— མགོན་ མེད་ ཟས་ སྦྱིན་ གྱི་ ཀུན་ ར་ བར་ བཞུགས་ པ།

Transcription.—Mgon-meḍ-zaṣ-ṣbyin-gyi kun-ra-war bshugṣ-pa.

Translation.—Sitting in the garden of Anāthapiṇḍada.

Explanation.—Anāthapiṇḍada, otherwise known as Sudatta, was a rich merchant of S'rāvasti (in Oudh). While stopping at the S'itavana of Rājagṛha, the Blessed One was invited to a feast by a householder of the city, at whose house Anāthapiṇḍada was then stopping. Hearing Buddha's discourses on charity, morality, etc., he became a lay follower. Afterwards he presented to Buddha a garden called Jetavana in which the latter spent the best part of his life.[3]

IX.

9. Original.— ཟས་ སྦྱིན་ གྱི་ རྒྱལ་ བྱེད་ ཚལ་ ཉོ་ བ།

Transcription.—Zaṣ-ṣbyin-gyi rgyal-byeḍ-tshal ño-wa.

Translation.—Anāthapiṇḍada buying Jetavana.

Explanation.—Anāthapiṇḍada (the rich merchant of S'rāvasti) sought to procure a suitable piece of ground for the establishment of a Buddist monastery, and his choice fell upon a park belonging to Jeta, son of King Prasenajit. He asked the prince for it; he at first refused, but finally agreed to sell it if Anāthapiṇḍada covered all the ground with gold pieces. To this the merchant consented. When he had nearly finished having the ground covered with gold, Jeta thought that it would be good for him to offer something

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[1] Original རྒྱལ་……སངས་…… ། Compare Dulva, Rockhill's *Buddha*, p. 52.

[2] Original རྒྱལ་……གཤོན་…… ། For the story see Rockhill's *Buddha*, p. 49.

[3] *Vide* Dulva iv, Rockhill's *Buddha*, p. 47.

to the Buddha for whose sake Anāthapiṇḍada was sacrificing so much, so he asked him to let him retain that part of the park not yet covered with gold. Anāthapiṇḍada let him have it, and on this ground the prince afterwards built a vestibule, which he gave to the order.[1]

X.

10. Original.— ཟས་སྦྱིན་ གྱི་ ཀུན་ དགའ་ར་ བཞེད་ གྲུབ་ པ།

Transcripton.— Zaṣ-ṣbyin-gyi kun-ḍgaḥ-ra b̲sheṅ grub-pa.

Translation.—Anāthapiṇḍada's garden (Jetavana) built and completed.

Explanation.—A monastery was built by Anāthapiṇḍada on the plan of one sent by the gods of the Tuiṣta heaven, contained sixty large halls and sixty small ones. The park is called Jetavana as well as Anāthapiṇḍadārāma. After an entertainment, Anāthapiṇḍada presented to the *Saṅgha* the park and the monastery by pouring water on the Buddha's hands. In this monastery of Jetavana the Buddha passed the seasons of rains of the third, fifth and several other years of his ministry.[2]

XI.

11. Original.— གྲུ་ འཁན།

Transcription.—Gru-ḫkhan.

Translation.—Ferry-man.

Explanation.—While Buddha was going to Benares, he had to cross the Ganges. The ferry-man asked him to pay ferry-fare. As Buddha had nothing with him, he could not pay the fare and so flew through the sky to arrive at the other side of the river. Astonished at this, the ferry-man went forth to King Bimbisāra of Magadha and related to him the miracle performed by Buddha. The King ordered that thenceforth ascetics should not be charged ferry-fare.[3]

XII.

12. Original.— གྲུ་ པ་ ལོང་ ནམ་ མཁའ་ ལ་ གཤེགས་ པ།

Transcription.—Gru-pa ḫoṅ nam-m̲khaḥ-la gs̊egs̲-pa.

Translation.—The ferry-man came when the Buddha went through the sky.[4]

XIII.

13. Original.— ཁྱིམ་ བདག་ དགེ་ བཟང་ གཙུག་ ལག་ ཁང་ བྱུལ།

Transcription.—Khyim-b̲dag ḍge-b̲zaṅ gtsug-lag-khaṅ phul.

Translation.—The householders Nanda and Bhadra present a monastery (convent-temple).

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1 Compare the history of Anepidu (Anāthapiṇḍada, in Hardy's *Manual of Buddhism*, 2nd edition, pp. 222-226).

2 *Vide* Rockhill's *Buddha*, pp. 48-49.

3 See *Lalitavistara*, Chapter 26, p. 528, Rājendra Lal's edition. 4 See *Lalitavistara*, Chapter 26.

XIV.

14. Original.— གྲག་འཛིན་མ་གཉིད་སོན།

Transcription.—Grag-ḥdsin-ma gñid soṅ.

Translation.—Yaśodharā asleep.

XV.

15. Original.— ཁྱིམ་བདག་རིགས་ཀྱི་བུས་ཆུ་རྐལ་ནས་སངས་རྒྱས་དྲུང་དུ་ཕྱིན།

Transcription.—Khyim-ḅdag rigs-kyi buṣ chu-ṛkal-naṣ saṅs-rgyaṣ druṅ-du phyin.

Translation.—The householder Kulaputra comes near Buddha passing through water.

XVI.

16. Original.— སིལ་ཙྪལ།

Transcription.— Sil-tshal.

Translation.—S'ītavana.

Explanation.—S'ītavana was a forest in Rājagṛha (near Patna) where there was a dreadful cemetery. S'roṇa-koṭi, a rich man of Campā (near modern Bhagalpore), used to go to this place to give himself up to the rudest penances. Finding that it did not bring him the passionlessness he sought, he went to Buddha to take refuge in the Three Gems (Buddha, Dharma, and Saṅgha). In a short time S'roṇa koṭi became an *arhat*.[1]

XVII.

17. Original.— ཤཱ་རི་བུས་མུ་སྟེགས་གཏུལ་ནས་དགྲ་བཙོམ་ཐོབ།

Transcription.— S'ā-ri-buṣ mu-stegs-gtul-naṣ ḍgra-ḅtsom-thob.

Translation.—S'āriputra attains arhatship subduing the Tīrthikas.

Explanation.—S'āriputra was a Brāhman, who lived at Nālanda near Rājagṛha. He learnt all the sciences of the Brahmans, and excelled in them at an early age. While still a disciple of Sañjaya, he met with a Buddhist monk named Aśvajit, who asked him the explanation of a certain abstruse Buddhist doctrine. Failing to explain it, and finding the doctrine to be very grand, he accepted Buddhism. Subduing all passions, he soon became an *arhat*, and one of the two chief disciples of Buddha, called his right-hand disciple.[2]

XVIII.

18. Original.— ཤཱ་རི་བུ་དང་མགོན་མེད་ཟས་སྦྱིན་གཉིས་ཕེབས་པ།

Transcription.—Sā-ri-bu daṅ mgon-meḍ zaṣ-sbyin gñiṣ phebs-pa.

Translation.—S'āriputra and Anāthapiṇḍada both come to see Buddha.

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[1] *Vide* Rockhill's *Buddha*, p. 72, 73. [2] Cf. Hardy's *Manual of Buddhism*, pp. 200-203, 2nd edition.

XIX.

19. Original.— བྲམ་ཟེའི་ཆུང་མས་གསེར་བུམ་རྙེད་བཏེན་པ་ཐོན།

Transcription.—Bram-zehi chuṅ-mas gser-bum rñed bhden-pa thoṅ.

Translation.—The Brāhman's wife perceives the truth while receiving a golden vessel.[1]

XX.

20. Original.— ལེགས་སྐྱེས་དགའ་སྟོབ་གཉིས་ཀྱིས་ཆོས་ཉན་བདེན་མཐོང་།

Transcription.—Legs-skyes dgaḥ-stob gñis-kyis chos ñan bden mthoṅ.

Translation.—Sujātā and Nandabalā both listen to religious discourse and sees the truth.

Explanation.—Buddha went to a village, the headman of which had two daughters named Sujātā and Nandabalā. They prepared for Buddha a milk-soup which he took in a crystal vase adorned with jewels, which two gods of the Akaniṣṭha heaven had brought him. The two girls listened to the discourse of Buddha and became his lay disciples.[2]

XXI.

21. Original.— བྲམ་ཟེ་ལྷས་སངས་རྒྱས་ལ་ཟོས་གསོལ་བ།

Transcription.—Bram-ze lhas saṅs-rgyas-la śos gsol-wa.

Translation.—The Brāhman householder, Deva, prays to Buddha to accept food.

Explanation.—Deva was a rich Brāhman of Kapilavastu. He and his wife both went to the Senani village, where they supplied Buddha with food and listened to his sermons.[3]

XXII.

22. Original.— འཆར་ཀ་བུད་མེད་འཚོལ་སྐབས་སངས་རྒྱས་དང་མཇལ་དགྲ་བཅོམ་ཐོབ།

Transcription.—Hchar-ka bud-edmhtshol skabs saṅsyas daṅ rgjal dgra-bcom thob.

Translation.—While Udāyī was going in search of a woman, he met with Buddha and attained Arhatship.[4]

XXIII.

23. Original.— ཁྱིམ་བདག་བཟང་བྱིན་ལ་བུ་མགོན་མེད་ཟས་སྦྱིན་བཙས་པ།

Transcription.—Khyim-bdag bzaṅ-byin-la bu mgon-med-zas-sbyin btsas-pa.

Translation.—Anāthapiṇḍada was born as son to the householder Sudatta (?)[5]

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[1] Original སྣང་། [2] Compare Rockhill's *Buddha*, p. 30. [3] Compare Rockhill's *Buddha*, p. 40.

[4] Spoken of a Brāhman in Uruvela. Compare Rockhill's *Buddha*, pp. 49-40.

[5] Sudatta and Anāthapiṇḍada were, according to most authorities, the same person.

XXIV.

24. Original.— བཅོམ་ལྡན་འདས་ ཀླུ་ ལ་ མེ་ སྤར་ བ།

Transcription.—Bcom-ldan-hdas klu-la me spar-wa.

Translation.—The Blessed One (*i.e.*, Buddha) poked fire on the Nāga (snake).

Explanation.—While staying in the room of Uruvela Kāśyapa at Gayā, Buddha sent forth flames to extinguish the venoms of the Nāga (snake) that belched forth fire and smoke on him.[1]

XXV.

25. Original.— ཀླུ་ ཡེ་ ལ་འཁོར་ ལོ་དེ་ སྒྱུར་ བར་ སྤྲུལ་ ནས་ བྱུང་ བ།

Transcription.—Klu-ye-la hkhor-lohi sgyur-war sprul-nas byun-wa.

Translation.—The Nāga (snake) Elāpatra was transformed into a Rājacakrava universal monarch.)

XXVI.

26. Original.— སྟེར་ སྐྱེས་ འོད་ སྲུང་ གྱི་ མེ་ ཁང་ དུ་ བཏུལ་ བ།

Transcription.—Ster-skyes (?) hod-srun-gyi me-khan-du btul-wa.

Translation.—Subdued (Nāga) at the fire-house of Uruvela (?) Kāśyapa.[2]

XXVII.

27. Original.— འོད་ སྲུང་ གིས་ འཁོར་ སྦྱིན་ སྲེག་ བྱེད་ པར་ སངས་རྒྱས་ ཀྱི་ མཐུས་ མེ་ མ། འབར་བ།

Transcription.—Hod-srun-gis hkhor-sbyin sreg-byed-par sans-rgyas-kyi mthus me-ma-hbar-wa.

Translation.—When Kāśyapa sacrificed the attendants on fire it was Buddha's power not to have them burnt therein.

XXVIII.

28. Original.— སངས་རྒྱས་ མེ་ འབར་ བྱིན་ གྱིས་ རླབས།

Transcription.—Sans-rgyas me-hbar byin-gyis rlabs.

Translation.—The fire was extinguished by the bliss of Buddha.

XXIX.

29. Original.— གཟུགས་ ཅན་ སྙིང་ པོ་དེ་ སྤྱན་ དྲང་ པ་ བ།

Transcription.—Gzugs-can sñin-pohi spyan dran-pa-pa.

Translation.—Bimbisāra inviting Buddha to a feast.

Explanation.—At the request of Bimbisāra, King of Magadha, the Blessed One came to Rājagṛha and with his disciples stopped in the grove called Yaṣṭivana. The King came to see him, and after having heard the Buddha preach, he invited him to a feast on the

1 Compare Kangyur's *Dulva*.

2 Rockhill's *Buddha*, p. 41.

morrow. When the feast was over, the King poured water over the Blessed One's hands, and said, "I give the Veṇuvana to the Blessed One to dispose of as it may please him." The Buddha accepted it, and this was the first permanent residence that the Buddhist order possessed.[1]

XXX.

30. Original —གཟུགས་ཅན་སྙིང་པོ་འཁོར་བཅས་ཀྱི་དགེ་བསྙེན་དུ་ཁས་བླངས་བདེན་པ་མཐོང་།

Transcription.—Gzugs-can sñiṅ-po ḥkhor-bcas-kyi dge-bsñen-du khas blaṅs bden-pa mthoṅ.

Translation.—Bimbisāra and his attendants promised to be upāsakas (devotees) and saw the truth.[2]

XXXI.

31. Original.— རྒྱ་བྱིན་ལ་བར་དུ་གཅོད་པ་སྐེ་བའི་མདོ་གསུངས།

Transcription.—Rgya-byin-la bar-du bcoḍ-pa ske-waḥi mdo gsuṅs.

Translation.—Buddha preached to Indra the discourse on *antarā-cheda-bhava* (the intervening state between death and re-birth

XXXII.

32. Original.— ཁྱིམ་བདག་ནོར་ཅན་གྱི་བུ་རབ་ཏུ་བྱུང་ནས་དགྲ་བཅོམ་ཐོབ།

Transcription.—Khyim-bdag nor-can-gyi bu rab-tu byuṅ-nas dgra-bcom thob.

Translation.—The son of the householder, Dhanika, accepts *Pravrajyā* and attains Arhatship.

XXXIII.

33. Original.— ཟས་སྦྱིན་སངས་རྒྱས་དང་མཇལ་ནས་རྒྱུན་ཞུགས་ཐོབ།

Transcription.—Zas-sbyin saṅs-rgyas daṅ mjal nas gyun-shugs thob.

Translation.—Anāthapiṇḍada meets with Buddha and attains *Srotāpatti* (the first path or the state of throwing oneself into the current of religion).

XXXIV.

34. Original.— འོད་སྲུང་བསྙེན་པར་རྫོགས་པ།

Transcription.—Ḥod-sruṅ bsñen-par rdsogs-pa.

Translation.—Kāśyapa is ordained.[3]

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[1] Original ཟུ་ཚ་ཅན་སྟེང་པོ།

[2] Original ཅས for བཅས། སྟེན for བསྙེན། སྟང་ for སྒང་།

[3] *Vide* Rockhill's *Buddha*, p. 41.

XXXV.

35. Original.— བདུད་ ཀྱི་ བུ་མོ་ དང་ བུའི་ བཟོད་ པ་ ཐོབ།

Transcription.—Bdud-kyi bu-mo daṅ buḥi bzod-pa thob.

Translation.—The son and daughter of Māra receive pardon.

Explanation.—The children of Māra the Devil tried to lead Buddha astray. Buddha conquered and pardoned them.

XXXVI.

36. Original.— ཤིན་ ཏ་ ལ་ ཕུག་ ན་ མེ་ ཁམ་ ལ་ སྙོམས་ པར་ ཞུགས་ པ།

Transcription.—Śiṅ-sa-la phug-na me-kham-la sñoms-par shugs-pa.

Translation.—Buddha sitting in meditation in the innermost part of the cemetry ground in the region of fire.

XXXVII.

37. Original.— ཤཱ་ རིའི་ བུ མོ་ག་ལ་ བུ་ གཉིས་ འཁོར་ ཅས་ རབ་ ཏུ་ བྱུང་ ཞིང་ འདུས།

Transcription.—Śā-riḥi-bu moḥu-ḥgal-bu gñis ḥkhor-cas rab-tu-byuṅ-shiṅ ḥdus.

Translation.—Śāriputra and Maudgalyāyana receive *pravrajyā* together.

Explanation.—The story of Śāriputra has already been related. Maudgalyāyana was a learned Brāhman youth who lived near Nālanda (in Behar). He was a friend of Śāriputra, with whom he prosecuted his studies under Sañjaya. On the conversion of Śāriputra to Buddhism, Maudgalyāyana too accepted the religion of Buddha. They two were the most eminent and favourite disciples of Buddha, one was called the right-hand disciple, the other the left-hand disciple. To these disciples Buddha summed up his doctrines as follows :—" Avoid all sins, practise all virtues ; cleanse the mind from all evil desires ; this is the religion of Buddha."

XXXVIII.

38. Original.— ཉ་གྲོ་ དྷ་ནི་ བྲམ་ ཟེའི་ བུ་ འོད་ སྲུང་ ལ་ གཤེགས་ སྐུ་ བཟང་ མོ་ ཆུང་ མར་ བླང་པ།

Transcription.—Nya-gro-dhaḥi bram-zeḥi bu ḥod-sruṅ-la gser-skya bzaṅ-mo chuṅ-mar blaṅ-pa.

Translation.—Nyagrodha Brāhman's son Kāśyapa marries Suvarṇabhadrā.

XXXIX.

39. Original.— བྱང་ སེམས་ ལ་ ཆོས་ གསུངས་ འཇམ་ དཔལ་ ལ་ བཏད་ པ།

Transcription.—Byaṅ-sems-la chos gsuṅs ḥjam-dpal-la btad-pa.

Translation.—Preached *dharma* to Bodhisattva but gave it to Mañju-śrī (?).

XL.

40. Original.— བྱ་རྒོད་ཕུང་རིར་ སེན་རིགས་ཀྱི་ ཤུས་ མདོ་ གསུངས་ དེཁི་ བདེན་པ་ མཐོཾ།

Transcription.—Bya-rgoḍ-phuṅ-rir sen-rigs-kyi shus mdo gsuṅs deḥi bden-pa mthoṅ.

Translation.—On the Gṛdhrakūṭā mountain (Buddha) preached the *Nakulapṛcchā sūtra* (*sen-rigs-kyi-shus ?*) and the devotees saw the truth.

XLI.

41. Original.— ཨེ་ ལ་ རངྒ་ གཟུགས་ སྟྲྀད་ པ།

Transcription.—E-la raṅ-gzugs stṛaḍ-pa.

Translation.—Elāpatra nāga (snake) assumes its own form.

Explanation.—Once on a time when the Blessed One was preaching religion, Elāpatra, the king of snakes, assuming the guise of a monarch, came to hear his sermons. The All-knowing Buddha, perceiving this, addressed him thus: "O King of Snakes, during the ministry of Buddha Kāśyapa you violated the rules of moral conduct, for which you were condemned to be born as a snake. Have you now come here, assuming a false appearance like a hypocrite, while I am preaching religion? Assume your own shape and listen to my sermons if your nature permits you to do so?" Next day, there appeared in the audience a huge serpent on whose head was grown an *elāpatra* tree. His body measured many miles, for while his head came to hear Buddha's sermons in Rājagṛha his tail lay in Taxila. The people were frightened to see this. Buddha consoled them and related to them the story of the former births of the snake.[1]

III.

A Chart containing the Charm of Vajrabhairava.

[Read August 2nd, 1905.]

This chart, which belongs to Dr. Percival Lopez of Barrackpore, was brought from a monastery near Gyantse during the late Tibet expedition. It is $3\frac{3}{4}$ cubits in length and $1\frac{3}{4}$ cubits in breadth; and is very beautifully embroidered in the Chinese fashion. It contains on one side a terrible but artistic representation of Vajrabhairava with his attendants and devotees; and on the other the mystic charm or incantation of that deity in Tibetan with the bloody impressions[2] of the palms of his votary.

Vajrabhairava, called by the Tibetans "Rdo-rje-ḥjigs-byeḍ," is regarded by the Hindus[3] as a terrific form of Śiva, but is believed by the Lamas to be a metamorphosis

1 Vide *Calcutta Buddhist Text Society's Journal*, Vol. II, Part I; and Rockhill's *Buddha*, pp. 46–47.

2 The impressions were made either with human blood or the fat of a black goat, blood, wine, dough and butter mixed together.

3 In the *Brahmavaivarta Purāṇa*, Chapters 41, 61, eight varieties of Bhairava (Śiva) are enumerated such as Mahā-bhairava, Saṃhāra-bhairava, Asitāṅga-bhairava, Ruru-bhairava, Kāla-bhairava, Krodha-bhairava, Tāmracūḍa-bhairava or Kapāla-bhairava and Candracūḍa-bhairava or Rudra-bhairava. These eight varieties are otherwise known as Vidyā-rāja, Kāma-rāja, Nāga-rāja, Sacchanda-rāja, Lambita-rāja, Deva-rāja and Vighna-rāja. Of these Rudra-bhairava (also called Vighna-rāja bhairava) of the Hindus is perhaps identical with the Vajra-bhairava of the Buddhists. For Buddhist Vajrabhairava see Waddell's *Lamaism*.

of the merciful Avalokiteśvara. He is included in the 'angry' type of the Tibetan deities. He carries a dreadful thunderbolt in his hands, and tramples on the enemies of his religion with his feet. He possesses a disproportionately large head, scowling brows, three cruel eyes, and a gaping mouth showing his canine fangs and rolling tongue. His beard and eye-brows are yellow, and his hairs are erect. His body, especially the upper part of it, is surrounded by fringes of curls, which represent coiled snakes beset with flames of fire. His limbs are encircled with snakes and he wears on his head a rosary of human skulls.

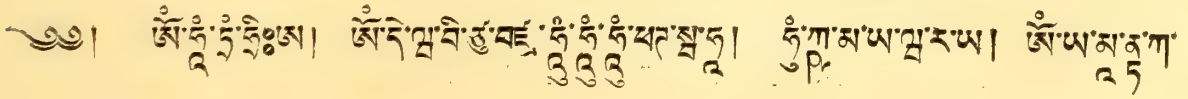
The big Vajrabhairava is surrounded by ten smaller ones. On the left of Vajrabhairava stands his female energy—the terrific Kālī—adorned with a rosary of human skulls and wearing on the head the ornament of human bones. Her limbs are surrounded by flames of fire. She tramples under each of her feet an enemy of her religion. Beneath her there stand two *Pretas* or hideous human bodies freshly flayed, fighting against each other with human bones and skulls and casting flames of fire all around.

On the top of the chart is depicted the Ādibuddha called Vajradhara (Tibetan—Rdo-rje-ḥchaṅ) who sits cross-legged, holds in one hand thunder, and in the other a bell; and is attended by the sun on one side and the crescent moon on the other. Just below Vajradhara sits the saint Tilopa, who received his inspiration directly from that deity and flourished in the middle of the 10th Century A.D. On the right side of Tilopa sits his pupil Naropa. Below Naropa sits his pupil, the famous Atiśa, who was a native of Vikramaṇipura in Bengal, and visited Tibet in 1042 A.D. On the left side sit Marpa and his pupil Milaraspa thinly clad in the Indian fashion.

The saints named above are the venerable personages of the Tibetan sect called Kar-gyu-pa, which was founded by Lama Marpa in the latter half of the 11th Century A.D. Vajrabhairava, who is the tutelary deity of the Ge-lug-pa sect that arose at the beginning of the 15th Century A.D. under the leadership of Tsong-kha-pa, is also worshipped by the Kar-gyu-pas. Vajradhara is the Ādi-buddha of both the Kar-gyu-pa and Ge-lug-pa sects. Hence I conclude that the chart must have belonged to the Kar-gyu-pa sect. The red colour of the hat that Atiśa wears conclusively proves that the chart did not belong to the Ge-lug-pa sect, the members of which wear yellow hats.

Vajrabhairava is a powerful deity who was appointed by Buddha himself as the custodian of his religion. He should be constantly propitiated by spells, offerings, the construction of magic circles, etc. He helps the votaries in times of peril, gives them prosperity in all temporal affairs and can ultimately make them reach the other shore or Nirvāṇa. He is accompanied by ghosts, goblins, imps, furies, genii, etc., who also when properly coerced can fulfil the desires of the votaries and enable them to attain *siddhi* (success). The charm, spell or incantation, the recitation of which propitiates Vajrabhairava and coerces his attendant devils, is said to have been composed by himself. The charm which appears on this chart runs as follows :—

Text.



ཧཱུྃ་ཕཊ། ཨོཾ་བཛྲ་ཀྲི་ལི་ཀྲི་ལ་ཡ་ས་ཏྭ་བིགྷ་ནཱ་ཏཱ་ཧཱུྃ་ཕཊ། ཨོཾ་ཨོཾ་ཨོཾ་ས་ཏྭ་བུ་དྷ་ཌཱ་ཀི་ནི་ཡེ། བཛྲ་ཝ་རྞ་ནི་ཡེ། བཛྲ་བཻ་རོ་ཙ་ནི་ཡེ་ཧཱུྃ་ཧཱུྃ་ཧཱུྃ་ཕཊ་ཕཊ་ཕཊ་སྭཱ་ཧཱ། ཨོཾ་བྷཱུ་ཏ་ཌ་མ་ར་བྷཱུ་ཏ་ཨ་དྷི་པ་ཏི་ཨ་ཀྵོ་བྷ་ཡ་ཀི་རི་ཏྲི་ན་ས་ཪྦ་བྷཱུ་ཏ་པྲེ་ཏ་པི་ཤ་ཙ་ན་ས་དྷ་ཡ་ཧཱུྃ་ཕཊ། ཧཱུྃ་བཛྲ་ཕཊ་ཨཿ། ཨོཾ་མ་ཧཱ་ཀཱ་ལ་ཧཱུྃ་ཕཊ། ཨོཾ་ཤྲཱི་མ་ཧཱ་ཀཱ་ལཱ་ཡ་ཧཱུྃ་ཧཱུྃ་ཕཊ། ཨོཾ་རོ་རུ་རོ་རུ་བི་ཏི་ཥྛ་ཝ་ཏྲ་སྐ་མ་ལ་ར་ཀྵ་སི་ཧཱུྃ་བྷྱོ་ཧཱུྃ། ཨོཾ་མ་ཧཱ་ཀཱ་ལ་ཁ་ཀཱ་ལ་བི་ཀ་ལ་ར་ཏྲི་ཏ། ཌོ་མྦཾ་ནི། ཙ་ཎྜ་ལི། ར་ཀྵ་སི། སི་ཧྔ་ལི། དེ་ཝ་ཧཱུྃ་བྷྱོ་ཧཱུྃ། ཏ་དྱ་ཐཱ། ཨོཾ་རོ་རུ་བི་ཏི་ཥྛ། ཝ་ཏོ་སི། མ་མ་རཀ་མོ་ཙྩི་ཏྟ་ར་ཁ་ར་མོ་བྷྱོ་བྷྱོ་སྭཱ་ཧཱ། ཨོཾ་བཻ་ཤྲ་མ་ཎ་ཡེ་སྭཱ་ཧཱ།

ཡེ་དྷ་རྨཱ་ཧེ་ཏུ་པྲ་བྷ་ཝཱ་ཧེ་ཏུན་ཏེ་ཥཱ་ན་ཏ་ཐཱ་ག་ཏ་ཧྱ་ཝ་དཏ།

ཏེ་ཥཱཾ་ཙྪ་ཡོ་ནི་རོ་དྷ་ཨེ་ཝཾ་ཝཱ་དི་མ་ཧཱ་ཤྲ་མ་ཎ་ཿ།།

ཨོཾ་སྭ་བྷ་ཝཱ་ཏྨ་ཀོ་ཧཾ།

སྟོན་ཆོ་རྒྱལ་བའི་སྐྱབས་སྟང་ཞལ་བཞེས་ལྟར།

སངས་རྒྱས་བསྟན་བསྡུས་བསྡུད་ཀའི་དོན་དབྱུ་འཛང་བསྟོད།

དགྱེན་སྟེ་སྐྱོང་འགྲོ་ལ་བདེ་སྐྱིད་སྟེལ།

རྣལ་འབྱོར་བཅོམ་བའི་འཕྲིན་ལས་བསྐྱབ་པར་མཛོད།

སརྦ་མངྒ་ལཾ།

Transcription

Oṃ-huṃ-trṃ-hriḥ-a | Oṃ de-va vi-tsu Vadsra huṃ huṃ huṃ phaṭ svā-hā | Hūṃ kṣa-ma-ya va-ra-ya | Oṃ ya-mā-nta-ka huṃ phaṭ | Oṃ vadsra ki-li ki-la-ya sa-rva-vig-nan vaṃ huṃ phaṭ | Oṃ oṃ oṃ sa-rva bu-dha ḍā-ki-ni-ye | Vadsra-va-rṇa-ni-ye | Vadsra vai-ro-tsa-ni-ye huṃ huṃ huṃ phaṭ phaṭ phaṭ svā-hā | Oṃ bhū-ta ḍa-ma-ra bhū-ta-a-dhi-pa-ti a-kṣo-bhya ki-ri-tri-na sa-rva bhū-ta pre-ta pi-śa-tsa na-sa-dha-ya huṃ phaṭ | Huṃ vadsra phat : | Oṃ ma-hā-kā-la huṃ phaṭ | Oṃ S'rī ma-hā-kā-lā-ya huṃ-huṃ phaṭ | Oṃ ro-ru ro-ru vi-ti-ṣṭha | Vatras-ka-ma-la rā-kṣa-si huṃ bhyo-huṃ | Oṃ ma-hā-kā-la kā-la vi-ka-la ra-tri-ta | Ḍo-mbaṃ-ni | Tsa-ṇḍa-li | Rā-kṣa-si | Si-ṅga-li | De-va-huṃ-bhyo-huṃ | Ta-dya-thā | Oṃ ro-ru vi-ti-ṣṭha | Va-to-si | Ma-ma-rak-mo tsi-ttra kha-ra-mo-bhyo-bhyo svā-hā | Oṃ vai-śra-ma-ṇa-ye svā-hā. |

Ye dha-rmā he-tu-pra-bha-vā he-tun-te-ṣan ta-thā-ga-ta hya-va-dat |

Te-ṣañ-tsa yo ni-ro-dha e-vaṃ vā-di ma-hā-śra-ma-ṇa :‖

Oṃ su-pra-ti-ṣṭha-va-dsra-ye svā-hā. |
S̈ṅon-tshe r̥gyal-waḥi s̈pyan-s̈ṅar shal-b̥shes̈-l̥tar. |
Saṅs̈-r̥gyas̈-b̥s̈tan b̥sruṃ ṅe-b̥s̈tan ḥdsin ḍwu-ḥphaṅ-b̥s̈toḍ |
D̲guen-sde skyoṅ ḥgro-la b̥de-s̈kyid s̈pel. |
R̲nal-ḥbyor b̥col-waḥi ḥphrin-las̈ b̥s̈grub-par m̲dsoḍ. |
Sa-rva ma-ṅga-laṃ. |

TRANSLATION.

Hail! O God Vajrabhairava! I invoke thee, may you receive this offering, may all my enemies be destroyed, forgive me, bless me! O Destroyer of Death, may my foes perish! O Thunder-wielder! may all my obstacles be removed! Obeisance to all imps, goblins, ghosts, furies, spirits, lords of ghosts—immoveable and bright like the thunder may you put an end to all my difficulties! O Vajra, O Mahākāla, Dombini, Caṇḍāli, Rākṣasi, Siṅgali, stay here, sit here, protect me! O Vaiśravaṇa, receive this offering!

All things that have proceeded from a cause, their cause the Tathāgata has explained; their cessation too has been explained by the great sage.

Obeisance and offerings to the immoveable Vajra

[Addressing Vajrabhairava—]

In ancient times you promised before Jina (Buddha) that you would protect his religion; may you therefore uphold the doctrine and praise its dignity. Protect the priesthood and shower blessings on all beings. May the practice of *yoga*, (mystic meditation) of which you are the custodian, succeed! Blessings to all!

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SAL-AMMONIAC: A STUDY IN PRIMITIVE CHEMISTRY

BY

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[Read, August 2nd, 1905.]

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The aim of the following paper is to convey some slight impression of the environment of the science of chemistry in its alchemical youth. For this purpose, a study is made of the history of the well-known substance Sal-Ammoniac, with the idea of throwing light upon the primitive conceptions of nature that led to its introduction as an alchemical drug.

Our earliest authority for the use of the term 'sal-ammoniac' is Pliny.[1] In his *Historia Naturalis*, XXXI, 39, the following statement occurs:—

"Invenit et [nativum salem] juxta Pelusium Ptolemæus rex, cum castra faceret. Quo exemplo postea inter Ægyptum et Arabiam, etiam squalentibus locis, cœptus est inveniri, detractis arenis: qualiter et per Africæ sitientia usque ad Hammonis oraculum. Is quidem crescens cum Luna noctibus. Nam Cyrenaïci tractus nobilitantur Hammoniaco et ipso, quia sub arenis inveniatur, appellato.[2] Similis est colore[3] alumini, quod schiston vocant, longis glebis, neque perlucidis, ingratus sapore, sed medicinæ utilis. Probatur quam maxime perspicuus, rectis scissuris. Insigne de eo proditur, quod levissimus intra specus suos, in lucem universam prolatus, vix credibili pondere ingravescat. Causa evidens, cuniculorum spiritu madido sic adjuvante molientes, ut adjuvant aquæ. Adulteratur Siculo, quem Cocanicum appellavimus: necnon et Cyprio mire simili. In Hispania quoque citeriore Egelastæ[4] cæditur, glebis pæne translucentibus, cui jampridem palma

[1] 23—79 A.D.

[2] Pliny thus derives the name of the salt from ἄμμος, sand, and not from the name of the god Ammon.

[3] 'Canescens' (*Hist. Nat.*, XXXV, 52, Harduin's ed., Paris, 1685).

[4] To the present day, common salt forms a large item in the exports of Spain; and a mountain of rock salt still exists at Cardona in the province of Barcelona.

a plerisque medicis inter omnia salis genera perhibetur. Omnis locus in quo reperitur sal, sterilis est, nihilque gignit: et in totum sponte nascens intra haec est."

The chief point to note in connexion with this extract is that Pliny, in the sentence commencing 'Similis est,' is unconsciously referring to an entirely different salt from that mentioned in the next sentence, which is probably taken from the *Materia Medica* of his contemporary Dioscorides (Book V, Sect. 126). The Egyptian salt, 'longis glebis,' is almost certainly a sodium carbonate ('Natron'), whereas the latter salt, 'rectis scissuris,' corresponds to common salt. The silence of Dioscorides and Pliny as to the volatility of the salt they describe also corroborates the view that the sal-ammoniac of the Greeks and Romans was not a salt of ammonia.[1]

Turning now to the consideration of its use in the current alchemy of the Alexandrian school, we find that although casually alluded to as a cleansing agent or flux,[2] sal-ammoniac finds no place in the lists of drugs that then entered into alchemical processes. This may be seen from the following comparative table of substances used for making gold and silver, which is drawn from the '*Treatise of Moses*' edited by Berthelot in the third volume of his *Collection des Anciens Alchimistes Grecs*.[3]

For Chrysopoïa.	For Argyropoïa.
Mercury (from Cinnabar)	'Mercury' drawn from
The metallic constituent[4] of Magnesia	(*a*) Arsenic[9]
Chrysocolla[5]	(*b*) Sandarach[9]
Claudianos[6]	(*c*) Psimmithion[10]
Yellow Arsenic	(*d*) Magnesia
Cadmia[7]	(*e*) Italian Stimmi[11]
Androdamas[8]	Copper

[1] This has been often pointed out before—first, I believe, by Beckmann in his *History of Inventions and Discoveries*, though I have not been able to refer to this book.

[2] *E.g.*, in the X Papyrus of Leyden. Cf. Berthelot, *Collection des Anciens Alchimistes Grecs*, I, Introd., pp. 30 and 45.

[3] Text, pp. 306 and 307; Trans., pp. 294 and 295. The '*Treatise of Moses*' does not furnish material for a complete table (*e.g.*, it does not mention Tin and Iron which are quoted from Democritos by Zosimos as entering into alchemical operations; cf. Berthelot, *op. cit.*, II, p. 159), but the lists now given are sufficient to show (*a*) that Alexandrian alchemy dealt chiefly with inorganic substances; and (*b*) that Mercury and Lead were the chief subjects of transmutation.

[4] Apparently an alloy of Lead and Copper, elsewhere called Μολυβδόχαλκός. One variety of Magnesia was probably therefore an impure lead sulphide; cf. Berthelot, *op. cit.*, I, Trans., p. 11; II, Trans., pp. 184-193.

[5] In the X Papyrus of Leyden, an alloy of Copper, Gold, Tin and other metals (Berthelot *op. cit.*, I, Introd., p. 36).

[6] According to Berthelot, (*op. cit.*, I, Introd., p. 244) this is an alloy of Copper and Lead.

[7] (*a*) An ore of copper; Pliny, *Hist. Nat.*, XXXIV, 2; (*b*) The volatilised deposit obtained in the metallurgy of silver (*Idem*, 22), and copper (Dioscorides, V, 84).

[8] Arsenical Pyrites; cf. Berthelot, *op. cit.*, I, Trans., p. 5.

[9] Arsenic = Orpiment, and Sandarach = Realgar; (Berthelot, *Collection des Anciens Alchimistes Grecs*, I, Introd., p. 238).

[10] Lead Acetate or Carbonate, cf. Pliny: "Fit autem ramentis plumbi tenuissimis super vas aceti asperrimi impositis, atque ita distillantibus. Quod ex eo cecidit in ipsum acetum, arefactum molitur, et cribratur, iterumque aceto mixto in pastillos dividitur, et in sole siccatur aestate." (*Hist. Nat.*, XXXIV, 54). According to Rossi (quoted by Liddell and Scott) the word is of Egyptian origin.

[11] Lead or Antimony Sulphide, (Berthelot, *op. cit.*, I, Trans., p. 11, note).

For Chrysopoïa.	For Argyropoïa.
Alum	Lead
Sulphur[1]	Earth of Chios[11]
Pyrites	White Cadmia
Ochre of Attica[2]	Asteritis [11]
Sinopis of Pontus[3]	Earth of Cimolia[11]
Divine Water[4]	White Arsenic
Yellow Sōry[5]	Misy [5] (crude and roasted)
Yellow Chalcanthon[6]	White Litharge
Cinnabar	Psimmithion
Various 'Plants' and 'Flowers'[7]	Red Natron
Cyanos[8]	Salt of Cappadocia[12]
Gum of the Egyptian Acanthus	White Magnesia,
Vinegar	Aphroselinon[13] of Glass.
Urine[9]	Cyanos
Sea Water	Burnt Lime
Solutions of: Lime; Ashes of Cabbage; Cream of Tartar; Natron (*νίτρον*); Arsenic; Sulphur	
Milk of an Ass [10]	
Milk of a Bitch[10]	

From the similarity of the contents of the '*Treatise of Moses*' to that of the alchemical Papyri of Leyden, we may conclude that this table represents an alchemist's equipment in Alexandria in the 3rd century A.D.; and as, moreover, little or no change in nomenclature

1 *Θεῖον ἄπυρον ὅ ἐστιν ἄκαυστον*, "Unburnt Sulphur which has been rendered incombustible." According to the 10th cent. Lexicon of the MS. of St. Marks, Venice, (Berthelot, *op. cit.*, I, p. 6), this is equivalent to saying "which has been whitened."

2 Perhaps Orpiment (Berthelot, *op. cit.*, I, Trans., p. 18).

3 Probably a natural Oxide of Iron; cf. Pliny, *Hist. Nat.*, XXXV, 13.

4 Solution of Calcium Polysulphide (Berthelot, *op. cit.*, I, Introd., p. 47).

5 Two varieties of Chalcitis, "lapis ex quo ipsum aes coquitur" (Pliny *Hist. Nat.*, XXXIV, 29, 30 and 31). Chalcitis, weathered into the form of alum called 'schiston' (*Idem*, XXXV, 52), from which it appears to be a sulphide or basic sulphate.

6 Greek 'Chalcanthon' = Latin 'Atramentum' = our 'Vitriol.' It seems to have generally contained some Copper Sulphate *e.g.*, Pliny, *op. cit.*, XXXIV, 22, "Color est caeruleus, perquam spectabili nitore, vitrumque esse creditur," and may therefore be assumed to be the decomposition product of copper pyrites.

7 These were probably symbolical names for mineral substances (Berthelot, *op. cit.*, II, Trans., p. 159, note).

8 Pliny (*Hist. Nat.*, XXXVII, 38) mentions a blue gem called Cyanos, but in the present case some salt of copper may be meant.

9 Both ordinary, and that of a boy—*οὖρον ἀφθόριον*.

10 Symbolical names for sulphur (?); cf. Berthelot, *op. cit.*, I, Trans., p. 6. In the 10th century Syriac Dictionary of Bar Bahlūl, the milk of a bitch is, however, a synonym for Iron Filings (!); cf. Berthelot, *La Chimie au Moyen Âge*, II, p. 130.

11 Various kinds of clay, of which Earth of Cimolia was probably Kaolin. Asteritis has been taken as equivalent to Earth of Samos; cf. Pliny, *Hist. Nat.*, XXXV, 53, 56 and 57.

12 Common salt; cf. Berthelot, *op. cit.*, I, Introd., p. 266.

13 Aphroselinon corresponds to either Selenite, Mica, or Talc (Berthelot, *op. cit.*, I, Introd., p. 267).

is found in the alchemical writings of Stephanos and other Greek commentators of the 6th and 7th centuries, the table may be taken as fairly typical of the alchemical ideas that prevailed in Egypt down to the time of the Arab invasion.

Arabic alchemy was chiefly drawn from Greek sources, but the most casual examination of the work of any alchemical author during the first five centuries from the *Hijra*, will convince the student of the great influence that was brought to bear on the Greek theories by Asiatic thought. The most striking result was the re-establishment of a belief in the essential connexion between animals, plants, and minerals, and a consequent revival of faith in the efficacy of of organic materials in alchemical research.

A quotation from Al-Khwārazmī's *Mafātīḥu-l-'Ulūm*, written about 976 A.D., will serve to make this clear.

"Al-Ḥajar ('The Stone'). Among the alchemists this is anything by which the Art can be performed, that is, anything out of which Elixir can be made. These substances are of two kinds, Animal, and Mineral. The best of these are the Animal.

"The latter are Hair, Blood, Urine, Eggs, Gall, Brains, Skulls, Shells, and Horns. The best of these is Human Hair, and next Eggs.

"The varieties of Mineral 'Stones' are (*a*) among the 'Bodies,' Gold, Silver, Lead, and Tin; (*b*) among the 'Spirits,' Mercury, Arsenic Sulphide, Sulphur, and *Nūshādur*."[1]

We see from this definition that *Nūshādur*, the substance whose name the Latin translators from Arabic of the 11th and subsequent centuries metamorphosed into Sal-Ammoniac,[2] had taken rank among the most important chemicals in Arabic alchemy, and our first duty therefore is to ascertain what was the special value of *Nūshādur* that caused it to be held in such high esteem.

Regarding this point, ample information exists in alchemical literature. The statements that will now be given are selected not only because they suggest a possible explanation for its use, but also for the reason that they afford clear indications as to its chemical constitution.

In the *Mafātīḥu-l-'Ulūm* the following is found: "Another of their substances is *Nūshādur*, and it is of two kinds (*a*) Mineral; and (*b*) Artificial, made from Hair."[3]

A second method of preparing it is given in the 13th cent. Latin treatise '*De Investigatione Perfectionis*,' that purports to be a translation of a work of Jābir, the 'Father of Arabian Alchemy,' who died in 776 A.D.

"*De Salis armoniaci præparatione.* Sal-armoniacus fit ex quinque partibus [vel duabus] urinæ humanæ et parte una sudoris ejusdem, et parte una salis communis, et parte una cum dimidia fuliginis lignorum, vel baculorum habitis simul coctis usque ad

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1 Van Vloten's ed., Leyden, 1895, p. 265. For the definition of 'Bodies' and 'Spirits' cf. *Idem*, p. 259—"Bodies are so called because they remain inert and fixed; while Spirits owe their name to the fact that they fly away when heated."

2 Or 'Armoniac.' "Debes habere de quatuor spiritibus, scilicet aurum vivum, sulphur, auripigmentum, sal-armoniacum," (*De Anima* of the pseudo-Avicenna, 1572 Basle ed., p. 96). This book was probably compiled in Spain 150 or 200 years after the death of Ibn Sīnā (Avicenna).

3 *Ed. cit.*, p. 259. When hair is subjected to destructive distillation below a red heat, white crystals of Ammonium Carbonate collect on the walls of the receiver. Sulphuretted hydrogen is also evolved. Practically no ammonium chloride is volatilised, but halogen can be detected in the residue.

consumptionem humiditatis ;[1] sublima salem armoniacum verum et utilem, hunc iterum in sudore dissolve, et congela, et sublima à sale communi semel; et est præparatus. Vel teratur primò cum præparatione Salis communis mundati, postea sublimetur in alto alutel, donec totaliter fuerit extractum purum: postea solvatur super porphydum[2] sub divo, si de ejus aqua habetur facere, vel servetur ipsum sublimatum et purum sufficienter."[3]

The famous Spanish botanist Ibnu-l-Baiṭār in his *Jāmī'u-l-Mufradāt* (Treatise on Simples) quotes the following remarks of three of his predecessors :—

"Ibnu-t-Tilmīḍh.[4] Il y en a deux espèces, un sel naturel et un sel artificiel. Le sel naturel sort de sources chaudes dans les montagnes du Khorassan,[5] que l'on dit avoir un bouillonnement très-intense. Le meilleur est le naturel . . . qui est clair comme du cristal.—El-Ghafeky.[6] C'est une espèce de sel . . . Il s'en trouve de fortement salé qui pique fortement la langue. Il y en a aussi qui provient de la suie des bains, surtout des bains chauffés au fumier.[7] . . . Il est utile contre les taies de l'œil. Il combat la procidence de la luette sur la gorge et convient contre les angines . . . Dissous dans de l'eau et versé dans une habitation, il en écarte les reptiles; versé dans leur repaire, il les tue.[8] Trituré avec de l'eau de rue et ingurgité, il tue les sangsues. Le Chérif El-Edrissy.[9] Préparé avec de l'huile et employé en frictions au bain sur la gale de nature atrabilaire, il la fait disparaître. Mâché et projeté dans la bouche des serpents et des vipères, il les tue subitement. Mélangé avec de l'huile d'œufs et employé en onctions sur la lèpre blanche, après des lotions préalables, il la guérit, surtout si l'on en prolonge l'usage."[10]

From these statements two inferences may be drawn. One is that the *Nūshādur* of the Arabs included both Ammonium Chloride and Ammonium Carbonate ; the other that the introduction of *Nūshādur* into alchemy, was, in all probability, due to its supposed magical character—a character which, as I shall now proceed to show, would undoubtedly be assigned to it by Asiatics from its intimate connexion with animal substances. Regarding the first point, no further explanation is necessary than the notes that have

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[1] Text 'hujusmodi' ; corrected from p. 715 of the *Artis Chemicae Principes ;* cf. Note (3) *infra.*

[2] Probably 'porphyrum,' the sense being that the sublimed sal-ammoniac is allowed to deliquesce in a porphyry vessel.

[3] This article occurs on p. 480 of the 16th cent. volume entitled *Artis Chemicae Principes,* the first part of which is occupied by the *De Anima* of the pseudo-Avicenna (cf. note 2, p. 28 *antea*). A portion of the same article is also found in another treatise attributed to Jābir, *viz.*, the '*De Inventione Veritatis,*' reprinted on pp. 709-735 of the Basle volume. By the process described, Ammonium Chloride would be obtained.

[4] Celebrated doctor of Baghdād, 1073—1164 A.D.

[5] Burnes (*Travels into Bukhara,* 1834 ed., II, p. 166) mentions that it is still obtained from the hills near Juzzak (Jazākh), a town to the N.E. of Samarcand in Khurāsān. As it is of volcanic origin, this salt is probably ammonium chloride, but I have not been able to discover where the analysis of it that Klaproth is reported to have made was published.

[6] Spanish botanist, † 1164.

[7] The soot of dung fires always contains an appreciable quantity of ammonium chloride. This was undoubtedly the chemical constitution of the sal-ammoniac of mediaeval Europe, as even down to the 17th century the sal-ammoniac of European commerce was almost entirely drawn from Egypt, where it was manufactured from the soot of the camel-dung fires of the fellahin. (cf. Ure's *Dictionary of Arts, Manufactures and Mines,* 7th ed., Vol. I, p. 149).

[8] In the Syrio-Arabic alchemical MS. of the British Museum (cf. Berthelot, *La Chimie au Moyen Âge,* II, p. 160) it is stated that it was for this reason that the symbolical name 'Theriac' was given to *Nūshādur.* This famous medicine of Galen was supposed to be very efficacious against snake-bite. Cf. also this paper, p. 37 note (1).

[9] Ash-Sharīf al-Idrīsī, better known as a geographer. His chief work, *Nuzhatu-l-Mushtāq,* was finished in 1154 A.D.

[10] Leclerc's translation, Paris, 1877, Tome III, p. 380.

already been given. In dealing with the second, I propose, for the sake of clearness, to confine myself almost entirely to a discussion of such beliefs in the magical properties of Hair, as may reasonably be supposed to have been current among Muhammadans of Arabic and Persian descent during the first five centuries from the *Hijra*.[1]

All magical rites spring from one source—the Pan-Animism of primitive races. To the savage it is almost impossible to conceive of matter devoid of the Immaterial; and when a body happens to be tenanted by a living soul, primitive man, with world-wide unanimity, agrees in extending the indwelling of the spirit to even such separable portions of the body as blood, hair, teeth and natural secretions. An evident corollary to the same idea is that "things which have once been conjoined must remain ever afterwards, even when quite dissevered from each other, in such a sympathetic relation that whatever is done to the one must similarly affect the other,"[2] and from this it is but a step to the practice of those magical rites by which men of all ages have striven to win control over another's will or life.

A familiar example among Semitic races of a belief in the connexion of a man's spirit with his hair is the story of Samson and Delilah, but in order to afford a clearer insight into the meaning of such beliefs, it may not be altogether inappropriate to illustrate what I have just stated by a detailed description of two ceremonial observances of the Muhammadans of modern India.

I will first deal with the methods of Exorcism that are employed by Muhammadans in the Madras Presidency.

When a devil enters into a man, his relatives prevent it from escaping prematurely by tying a knot in the demoniac's hair, and an exorcist [*'āmil* عامل] is summoned to expel the evil being with due ceremony. The exorcist begins by ascertaining the name of the demon, its place of origin, and the duration of its stay in the patient's body. Sometimes this information is obtained without any trouble, but if the devil is obstinate, it can be forced to speak by flogging the demoniac with a rattan over which an incantation has been read. The evil spirit is afterwards appeased by being asked what kind of food it would like as an offering on the day of its departure.

On the appointed day the exorcist enquires of the devil the exact spot at which it intends to leave the patient, and having obtained the necessary information, he follows the demoniac about wherever he goes, holding on by his hair either at the back or on one side of the head. "Wherever he may fall down, there he must let him lie; and having read the incantation, or the *aet-ool-koorsee*,[3] over an iron nail or wooden peg, he is to strike it into the ground.[4] The moment the demoniac falls down, the exorcist instantly plucks out one

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[1] It should, however, be understood that similar arguments may also be used in connexion with most, if not all, other organic products.

[2] Frazer, *The Golden Bough*, 2nd ed., I, p. 49.

[3] آية الكرسي (*Āyatu-l-Kursī*, 'the Verse of the Throne'), Verse 256 of the second Chapter of the Qur'ān.

[4] The account is somewhat confused, but the use of the nail is apparently to peg the devil down, and so prevent him from escaping while being transferred from the demoniac to the bottle.

Similar ideas were current in Europe during the time of Pliny, *e.g.*, a man could be injured by hammering a nail into an image, or drawing, "Defigi quidem diris deprecationibus nemo non metuit" (*Hist. Nat.*, XXVIII, 4); while epilepsy could be cured

or two hairs from among those which he holds in his hand, and reading some established spell over them, puts them into a bottle and corks it up; whereupon the patient's devil is supposed to be imprisoned therein. Then he either buries the bottle underground or burns it; after which the devil never returns.

"Some *Seannas*[1] make a small wax doll, fasten one extremity of a hair to the crown of its head, and the other to the bottom of a cork, fill the bottle with smoke, put the doll into it, and cork it up. They put in smoke to prevent people distinguishing the doll, which remains suspended in the middle of the bottle. The *Seanna*, the moment the demoniac falls on the ground, pulls out a hair or two as above stated, and contrives to insert them into the bottle; which, holding up to public view, he exclaims, "Behold! I have cast the devil out of the demoniac and confined him in this bottle. There he is, standing in the middle of it, longing to come out. Now, if you give me so much money, well and good; if not, I will let him loose again." Those foolish people, on beholding the doll in the bottle, actually believe it to be the devil himself, and out of fear give him any sum of money he asks, and get it buried or burnt."[2]

The story just given is chiefly noticeable for the light that it throws on the path by which men passed from a belief in the innate spirituality of hair to the utilisation of the same or any other adjunct of the human body in operations that were designed with the intention of bringing one man into another's power. The procedure only varied in detail. "A drop of a man's blood, some clippings of his hair or parings of his nails, a rag of the garment which he had worn, sufficed to give a sorcerer complete power over him. These relics of his person the magician kneaded into a lump of wax, which he moulded into the likeness and dressed after the fashion of his intended victim, who was then at the mercy of his tormentor. If the image was exposed to the fire, the person whom it represented

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by hammering an iron nail into the place where the head of the patient had lain, "Clavum ferreum defigere, in quo loco primum caput defixerit corruens morbo comitiali, absolutorium ejus mali dicitur" (*op. cit.*, XXVIII, 17).

1 سیانا, *Siyānā*, an Urdu word literally meaning 'cunning,' or 'artful.' Herklots translates it by 'conjuror.'

2 *Qanoon-e-Islam* by Jaffur Shurreef (Ja'far Sharīf of Ellore), Herklot's translation, 1863 ed., pp. 220-222. Ja'far Sharīf mentions with approbation at the beginning of his chapter on Exorcism the *Juwāhir-i-Khamsa*, written in 956 A.H.(=1549 A.D.), by Muḥammad Ghauth Gwāliyārī, who was a descendant of the famous Persian Ṣūfī Farīdu-d-dīn 'Aṭṭār († 1230 A.D.) An examination of a MS. copy of the *Juwāhir-i-Khamsa* that is in the library of the Asiatic Society of Bengal does not, however, lend any support to the suggestion that Ja'far Sharīf derived most of his information from this book, and the account quoted in the text may, therefore, be accepted as an independent description of the methods that were current in Madras when the *Qanoon-e-Islam* was written, 75 years ago.

In Bengal (Calcutta), the methods employed are of a much simpler character. The *'āmil* himself ties the knot in the demoniac's hair when he first sees him, and he is generally content if the devil is simply driven away by his exorcisms. The bottling process is only performed if the spirit persists in returning. The patient's hair does not seem to be used as a medium for transferring the spirit to the bottle, nor is the spirit pegged down during the operation. Iron pegs are, however, employed by Bengali Muhammadans to safeguard a house against the advent of evil spirits. A house may be protected either by the insertion of one nail on each side of the threshhold, or by placing one in each of the four corners of the house. Suitable extracts from the Qur'ān are read while this is being done.

In the case of patients whom the *'āmil* is not allowed to see, such as women, he writes an incantation on a piece of paper, and directs that it should be bound round a stick by many strands of cotton. This torch (پلیتہ, *palītah*—or *falītah*), after being dipped in *ghī*, is taken to the patient's room and lighted. If the patient can be induced to stare at it, the evil spirit will depart with the rising smoke. A much fuller account of the same process, accompanied by illustrations of the prescribed charms, is to be found in the *Qanoon-e-Islam*, pp. 223 and 224.

straightway fell into a burning fever; if it were stabbed with a knife, he felt the pain of the wound."[1] Such was a typical form of the enchantment.

These and similar rites were only too familiar to the inhabitants of Western Asia in pre-Islāmic times;[2] they survive in the East to the present day; and one effect on popular imagination is seen in the care that is still displayed even amongst civilised races in the disposal of shorn hair. An excellent illustration of this is the peculiar ceremony called *'Aqīqah*[3] (عقيقة) that is observed in every Muhammadan household soon after a child's birth.

Amongst Bengali Sunnis of good family, the *'Aqīqah* ceremony is generally performed on the seventh day after birth.[4] Instances are also known of the fortieth day being chosen, but this variation is probably due to the fact that the fortieth day marks the end of the mother's ceremonial impurity. As this is always celebrated by another festival called *Chilla* (چلا) a combination of the two ceremonies is obviously useful in reducing the necessary expenditure to a minimum.

Early in the morning on the day selected, the members of the family assemble, and in their presence the family barber completely shaves the child's head. The shorn hair[5] is carefully weighed against an equal weight of gold and silver[6] and then wrapped up with the latter in a *pān*-leaf.

Meantime a sacrifice has been got ready. This consists of two goats (or sheep)[7] in the

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[1] The ancient Egyptian procedure (Maspero, *apud* Frazer, *Golden Bough*, I, p. 15.).

[2] *E.g.* Frazer, *op.cit.*, I, p. 377.

[3] From *'Aqqa* (عقق) to cut, referring either to the child's hair or to the animal's throat. The *'Aqīqah* is not mentioned in the Qur'ān, but is connected with pre-Islāmic times by reliable tradition. Thus Ibn 'Ābidīn gives on the authority of Abū Da'ūd († 888 A.D.) the following statement of Buraydah, one of the Companions of the Prophet, "We used, in the time of ignorance, when children were born to us, to slay sheep and rub the child's head with the blood; but when Islām came, we sacrificed a sheep on the seventh day, and shaved the child's head and rubbed saffron on it." Qutādah, another Companion (quoted by Majdu-d-dīn al-Fīrūzābādī), corroborates this by his statement that until the practice was forbidden by Muḥammad, a handful of the goat's hair used to be dipped in the blood and smeared over the boy's hair before his head was shaved.

The use of saffron seems to have died out in Bengal, but Ja'far Sharīf states that it is customary in Southern India—presumably in the neighbourhood of his native-place, Ellore. The saffron, however, is there applied to the child's head after the barber has done his work. The practice of the Muhammadan Malays, who probably drew their religious beliefs from Southern India, is much nearer the original, as when they perform the *'Aqīqah*, a red lather is rubbed over the child's head before shaving off the hair (Skeat, *Malay Magic*, p. 341).

[Dr. Annandale, who has visited the extreme S.E. corner of India—Ramnad in the Madura district—since this paper was written, informs me, on the other hand, that the ignorant Muhammadan sect of 'Lubbais' of that part of India only use oil, or a mixture of oil and sandalwood. This is rubbed on after the boy's head has been shaved. Ja'far Sharīf also notes this substitution of sandalwood for saffron, as customary amongst people who cannot afford the more expensive saffron.—Sept. 20th, 1905.]

[4] Ibn 'Ābidīn states that Muḥammad performed the ceremony on himself after becoming a Prophet, but, subsequently, when his grandchildren Ḥasan and Ḥusain were born to Fāṭimah and 'Ali, he used the seventh day after birth for its observance. Traditionists, however, agree that *'Aqīqah* can be lawfully performed at any time up to the age of puberty. Robertson Smith (*Religion of the Semites*, p. 330), is of the opinion that the *'Aqīqah* was originally a ceremony of initiation into manhood, and that the transference of the ceremony to infancy was a later innovation.

[5] So far as I can ascertain, no analogous practice exists amongst Bengali Mussalmans with regard to the first parings of a child's nails. They are simply thrown away.

[6] A few filings of gold and a two-anna piece. According to the Imām Muḥammad Ash-Shaybānī († 804 A.D. He was a pupil of the jurisconsult Abū Ḥanifa, who died in 767 A.D.), the hair of Ḥasan and Ḥusain was weighed against silver, which was then given to the poor. The traditionists Mālik († 795 A.D.) and Shāfi'ī († 820 A.D.) state, on the other hand, that it is preferable to weigh the hair against both silver and gold (Majdu-d-dīn al-Fīrūzābādī).

[7] Females or geldings; not, as Ja'far Sharīf states, males.

case of a boy, and one in the case of a girl.[1] The animals' throats are cut by the principal member of the family, who says as he does so, '*Bismillah Allāhu akbar*,'[2] and after the carcases have been skinned and disembowelled by a butcher, the flesh is carefully removed from the bones and divided into two portions. The larger part of the uncooked meat is distributed among the friends of the family. The remainder[3] is kept and cooked for the evening meal; but of this meat neither the father nor mother of the child may partake.

The skins of the slaughtered animals are invaribly sold, and the proceeds given to the poor. The offal and hoofs are thrown away. The bones—which must on no account have been broken, as that would be of ill-omen for the child—are usually buried with the *pān*-leaf containing the hair and precious metals in any convenient waste piece of ground.[4] Some Calcutta Muhammadans, however, are in the habit of burying their son's hair in a hole dug in the ground within the precincts of either the Law Courts, the Legislative Department, or a mosque. In the two former cases, the idea is that this procedure will ensure worldly success to the boy in after-life, while if the hair is deposited in the compound of a mosque [5] it is believed that the bent of the child's mind will be towards religion.[6]

The first of the practices that have just been described recalls to our recollection the

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1 Robertson Smith states (*Kinship and Marriage*, pp. 180-182,) that according to the earliest traditions, the *'Aqīqah* was only performed in ancient Arab times for boys, but it is obvious from the commentary of Ibn Ḥajar, that there was great difference of opinion on this point. Ibn Ḥajar quotes Abū Hurairah, one of the Companions, to the effect that in the time of the Prophet only Jews omitted to perform the *'Aqīqah* ceremony for their daughters. [The Lubbais—see note (3) p. 32, *antea*—still only perform the ceremony on boys of 2 or 3 years old.]

2 Ibn 'Ābidīn says that the following prayer should be offered by the child's guardian, whilst the animals are being slain. "O God, this is the *'Aqīqah* for my child, blood of the *'Aqīqah* for his blood, flesh for his flesh, bone for his bone, skin for his skin and hair for his hair. O God, may it serve as a ransom of my son from hell!"

3 The Prophet ordered that one leg should be given to the midwife, but in modern Calcutta, where all the midwives are Hindus, this injunction naturally cannot be observed. Instead, the midwife receives some dhāl and rice, with a gift of money.

4 The burying of the *'Aqīqah* hair does not seem to be authorised by Muhammadan tradition, and might therefore be regarded as being of Indian origin (cf. Oldenberg, *Sāṅkhāyana Grihya Sūtra*, (Sacred Books of the East, Vol. XXIX, p. 57). A similar practice, however,—the recognition of which can be traced back to the early centuries of Islām—is seen in the burying of the pilgrims' hair at Mina Bazaar, near Mecca, when the 'Haj' is complete (cf. Burton's *Pilgrimage to El Medinah and Makkah*, Vol. III, p. 285, note). In Southern India (cf. *Qanoon-e-Islam*, p. 21) the hair, instead of being offered to the earth, is consigned to the water, a practice which may be regarded as analogous to the Thursday evening offerings of the more ignorant Bengali Muhammadans to Al-Khiḍhr ('The Green One'), the deathless being who is supposed to be alluded to the Sūrah XXVIII of the Qur'ān, and who is believed to look after the well-being of devout Mussalmans. It is popularly believed that he resides in the waters of tanks and rivers and, to propitiate him, lamps are lighted every Thursday at dusk on the sides of tanks, while offerings of food are floated away on pieces of plantain leaf.

The impossible and—to orthodox Muhammadans of the present day—scandalous Malay idea of endeavouring to get the shorn hair thrown into the sacred well of Zamzam at Mecca (Skeat, *Malay Magic*, p. 342), may either be a survival of the practice of Southern India, or an imitation of the Siamese custom described by Young (*Kingdom of the Yellow Robe*, p. 79). It is hardly likely to go back to the times when offerings were actually made to Zamzam and other sacred wells in Arabia (cf. Robertson Smith, *Religion of the Semites*, pp. 168 and 177).

5 Similar examples of the dedication of hair at shrines by the ancient Arabs are given by Robertson Smith, (*op. cit.*, p. 331). [The Lubbais—see note (3) p. 32, *antea*—also bury the *'Aqīqah* hair near a mosque].

6 The references to traditional authorities that I have been able, through the assistance of Maulawī Hidāyat Ḥusain, to add to the foregoing account, are chiefly drawn from (*a*) the *Fatḥu-l-Bārī fi Sharḥi-l-Bukhārī* of Ibn Ḥajar al-'Asqalānī († 1449 A.D.). This is a commentary on the *Jāmi'u-ṣ-Ṣaḥīḥ* of the celebrated traditionist Al-Bukhārī († 870 A.D.); (*b*) *the Sifru-s-Sa'ādah* of Majdu-d-dīn al-Fīrūzābādī († 1414 A.D.); (*c*) the *Baḥru-r-Rā'iq* of Ibn Nujaim († 1562 A.D.). This is a commentary on the *Kanzu-d-Daqā'iq* of Hāfiḍhu-d-dīn an-Nasafī († 1310 A.D.); (*d*) Ibn 'Ābidīn's abridgment of the *Fatāwī al-Ḥāmidīyya* of Sa'dī Efendī Ḥāmid al-Qonāwī († 1577 A.D.). Ibn 'Ābidīn, who is much esteemed in India as a jurisconsult, died in 1836.

fact that medical science in its origin was based upon a belief in the theory that all disease originated from demoniacal possession ;[1] the second affords an excellent example of the belief in the permanence of the spiritual connexion between mankind and their shorn locks ; while considered together they offer the further suggestion that if we were in a position to prove that the Arabs utilised human hair in combatting disease, we would, *ipso facto*, be provided with valuable evidence towards establishing the magical origin of the use of sal-ammoniac. This proof is readily obtained from the pages of Ibnu-l-Baiṭār. As usual he cites earlier authorities.

" Razès dans le *Continent.*[2] Aṭhour Sophos dit que les cheveux de l'homme, trempés dans du vinaigre et appliqués sur la morsure d'un chien enragé, la guérissent à l'instant. Trempés dans du vin pur et de l'huile et appliqués sur une plaie de la tête, ils l'empêchent de s'enflammer. Les vapeurs des cheveux brûlés, respirées, combattent l'hystérie et les écoulements utérins. Les cheveux brûlés, triturés avec du vinaigre, sont appliqués utilement sur les pustules. Triturés avec du miel et employés en embrocations sur les aphthes chez les enfants, ils obtiennent un succès prononcé. Si on les triture avec de l'encens qu'on en répande sur les plaies de la tête après avoir fait des onctions avec de la poix, ou bien si on les bat avec du miel et qu'on les applique sur ces plaies, on les guérit. Si l'on triture des cheveux brûlés avec de la litharge et qu'on en fasse des frictions sur la gale et les démangeaisons de l'œil, on les fait passer.[3] Les cheveux brûlés, triturés avec du beurre de brebis et employés en frictions sur les ecchymoses et les tumeurs causées par les mouches, sont un remède sûr. Mélangés avec de l'huile de roses et injectés dans l'oreille, ils en guérissent les douleurs . . . . . Propriétés d' Ibn Zohr.[4] Les cheveux d'un jeune enfant, avant qu'ils aient acquis de la consistance, portés par un individu goutteux ou piqué par un scorpion, le soulagent et lui enlèvent sa

1 An example in the past is that of the ancient Egyptians. "The illnesses to which the human race is prone . . . . were all attributed to the presence of an invisible being, whether spectre or demon, who by some supernatural means had been made to enter the patient, or who, unbidden, had by malice or necessity taken up his abode within him" (Maspero, *Dawn of Civilisation*, p. 215).

A survival of the belief to the present day is shown by the following statement regarding the Patāni Malays. "A Jalor midwife said that every person had one hundred and ninety spirits in him, each of which was the cause of some particular disease, and each of which, if it gained the mastery over the rest, could bring about the disease it represented" (Annandale, *Fasciculi Malayenses*, Anthropology, Part II (*a*) p. 37).

2 The *Ḥāwī* of Abū Bakr ibn Zakarīyā ar-Rāzī, the celebrated doctor, † 923 or 932 A.D. The suggestion conveyed by the name of the authority first mentioned that Ar-Rāzī is quoting from some Greek author, is confirmed by the fact that most of the information is also to be found in Pliny. See next Note.

3 Compare with the foregoing, "Virorum quoque capillus, canis morsibus medetur ex aceto: et capitum vulneribus ex oleo aut vino. . . . . Combustus æque capillus, carcinomati" (Pliny, *Hist. Nat.*, XXVIII, 9). " Quae ex mulierum corporibus traduntur ad portentorum miracula accedunt. . . . . Capilli si crementur, odore serpentes fugari. Eodem odore vulvæ morbo strangulatas respirare. Cinere eo quidem, si in testa sint cremati, vel cum spuma argenti, scabritias oculorum ac prurigines emendari: item verrucas ('warts'), et infantium hulcera cum melle. Capitis quoque vulnera, et omnium hulcerum sinus, addito melle ac thure" (Pliny, *op. cit.*, XXVIII, 20).

The following may also serve to recall two other sources of sal-ammoniac: "Æschines Atheniensis excrementorum cinere anginis medebatur, et tonsilis, uvisque et carcinomatis. Hoc medicamentum vocabat botryon" (*op. cit.*, XXVIII, 10.): and (speaking of the Ophiogenes of Cyprus, whose saliva was said to cure snake-bite) " Atque eorum sudor quoque medebatur, non modo saliva" (*op. cit.*, XXVIII, 6).

4 Abu'l 'Alā' Zuhr ibn 'Abdi-l-Malik ibn Zuhr, who died at Seville in 1131 A.D. He was the father of 'Avenzoar' of the Latins.

souffrance.[1] Les fumigations faites avec les cheveux de l'homme jaunissent les objects qu'elles atteignent. L'eau distillée qu'on en obtient, employée en frictions, fait pousser les cheveux."[2]

In practically all the cases just quoted, the cure may be regarded as the victory of the human personality in the hair over the spirits of disease, and this being so, a similar explanation necessarily follows for the medicinal uses of the sal-ammoniac into which hair passes when it is heated. The smell, and volatility of the salt offer further associations of a magical character; and we begin, therefore, to understand the reasons that finally led to the classification of sal-ammoniac as one of the 'Spirits' of the Art.

Another manifestation of a belief in the spirituality of hair and other animal substances is a proneness to expect the re-appearance of the spirit in some living form. In early Islām, such an idea would be familiar to Muhammadans of Persian descent from the statement of the Avesta[3] that children's hair and nails, if not buried with suitable rites, turn into lice, while the following extracts will illustrate to what lengths the theory had extended four or five centuries later.

The first is taken from the translation by M. R. Duval of a Syrio-Arabic MS. in the British Museum, which probably dates from the 10th or 11th century A.D.

"Nous pouvons faire qu'un végétal devienne animal, et qu'un animal produise un autre animal. Soit par exemple les cheveux. Quand les cheveux humains pourrissent, après un certain temps il se forme un serpent vivant. De même, la chair de boeuf se change en abeilles et en frelons; l'œuf devient dragon; le corbeau engendre les mouches. Bien des choses, en pourrissant et en s'altérant, engendrent des espèces d'animaux. De la pourriture des plantes naissent certains animaux. Quant au basilic, en pourrissant, il engendre des scorpions venimeux. De même un grand nombre de plantes en pourrissant et en s'altérant, produisent des animaux."[4]

The second is a passage from Tughra'i, an alchemist who died in 1121 A.D.,[5] cited by Ibn Khaldūn in his '*Prolegomena*' (De Slane's translation).[6]

"Nous avons plusieurs fois vu comment on peut créer des animaux sans en connaître les differences spécifiques;[7] avec de la terre et de la paille on peut faire naître des scorpions, et avec des crins on peut former des serpents. Citons encore l'exemple (de production artificielle) mentionné par les auteurs qui ont traité de l'agriculture: quand les abeilles viennent à manquer, on peut en extraire un essaim du cadavre d'un veau. Mentionnons aussi la manière de produire des roseaux (en plantant) des cornes d'animaux ongulés, et comment on obtient des cannes à sucre en remplissant ces cornes avec du miel avant de les planter."

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1 For boys' hair as a cure for gout, cf. also Pliny, *op. cit.*, XXVIII, 9.

2 Ibnu-l-Baiṭār, Leclerc's translation, Tome II, pp. 334 and 335.

3 Darmesteter's translation of the *Vendīdād* (Vol. IV.—Sacred Books of the East), pp. 186-188.

4 Berthelot, *La Chimie au Moyen Âge*, II, p. 155.

5 Better known for his *Lāmīyatu-l-'Ajam*, a lament on the misfortunes of his times. This was translated into Latin verse by Pococke, the first Laudian Professor of Arabic at Oxford.

6 III, p. 255.

7 *I.e.*, the differences that separate one group of animals from another.

The important point of these quotations is that they are the actual arguments employed by alchemists in upholding the possibility of the conversion of base metals into silver and gold. Both are taken from alchemical works, and in Tughra'ī's treatise, the author at once follows up his statements by the remark "If then such changes can be brought about by artificial means, what is to prevent similar transmutations among the metals?"

The argument must indeed have seemed an almost unanswerable one to Muhammadans of those times, for the transmutation of dead and living matter is a dogma founded upon popular observation, while its strength is sufficiently shown by the fact that it gains a certain amount of credence in European countries even at the present day.[1] As Maspero has pointed out, such ideas are likely to have been fostered in the early ages of Islām by the belief of the Egyptians that their gods, after death, were changed into gold, silver, and lapis lazuli;[2] but in all probability, a far more potent influence was the belief that existed throughout Muhammadan times in the essential unity of the world of nature. No strict line of demarcation separated plants and minerals from animals and man; all were looked upon as closely related units of a single whole.

In accordance with this belief we find Arabic alchemy based upon the principle that minerals consist of Body, Soul and Spirit.[3] By an obvious deduction it follows, that as the products of the Art, *i.e.*, gold and silver, resemble a human body,[4] their difference from the baser metals may possibly be ascribed to their healthier condition. In other words, the base metals must be suffering from diseases, and these diseases it is the business of alchemy to cure.

One of the clearest expositions of this doctrine that is to be found in alchemical literature, occurs in the *Pretiosa Margarita Novella*, written at Pola, in Istria, by one Petrus Bonus, 'Ferrariensis Physicus subtilis,' in the year 1330. Though the writer was a European, he is evidently drawing on Arabic authorities for his material.

The extract is made from a chapter bearing the rubric, 'In quo ostendit, quid sit Theriaca et venenum in lapide Philosophorum, secundum antiquos Philosophos.'

"Sic et hic lapis efficit in metallis leprosis, et ideo quandoque venenum, quandoque Theriaca dicitur. Metalla enim corrupta, quæ sunt quatuor,[5] laborant speciebus lepræ quatuor, ex aliquo quatuor humorum[6] corruptorum, et sanatur per dictum lapidem, sicut

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1 A case in point is the English and American belief mentioned by Dr. Annandale in a recent number of the *Journal of the Asiatic Society of Bengal* (Vol. LXXIII, Part III, No. 4, 1904) that Hair—Worms represent a stage in the development of a horse-hair into an eel or snake. From the quotations just given, it seems possible that the idea may have been introduced into Europe by the Arabs.

2 *Dawn of Civilisation*, p. 110.

3 Ibn Khaldūn, *trans. cit.*, III, p. 220.

4 Ibn Khaldūn, *trans. cit.*, III, p. 212. Both this, and the previous statement are quoted from a treatise of a pupil of the Spanish alchemist Maslama al-Majrīṭī, who died in 1007 A.D.

5 Iron, Copper, Tin and Lead. Bonus subsequently explains that silver is also corrupt, but that it differs from the other four metals in containing a 'theriac,' which enables it to purify itself and become gold in the presence of 'the Stone.'

6 The four humours were Black Bile, Yellow Bile, Phlegm, and Blood.

lepræ hominum per serpentes appropriatos.[1] . . . Aurum autem purissimum est, et nobilissimum, et æqualissimum, sicut sol inter sidera, et sicut sanguis purissimus in corpore humano temperatæ complexionis, carens omni extranea qualitate, et habens sanitatem summam. Et ideo ars sequens naturam, vult omnia cum hoc lapide sanare, [et est Theriaca et venenum], et in solum aurum transmutare, sicut facit natura. . . . Et Hali in suis Secretis: Hoc est sulphur rubeum, luminosum in tenebris: et est hyacinthus rubeus, et toxicum igneum, et interficiens et Leo victor, et malefactor, et ensis scindens, et Theriaca sanans omnem infirmitatem, etc. . . . Et Haly: Hic lapis est vita mortuorum et eorum refectio: est etiam medicina, conservans corpus et purgans, etc. . . . Et Morienus: Est autem elixir medicina ex pluribus confecta, quæ quidem medicina infirmitates metallorum sanat, quemadmodum Theriaca infirmitates hominum. Unde à quibusdam venenum appelari solet: quia sicut venenum in corpore humano, ita elixir in corpore metallino, etc."[2]

If we recall for a moment the belief of the early Muhammadans in the medicinal potency of hair, we cannot but acknowledge that such views on the constitution of matter made it inevitable that hair should be regarded by Arabic alchemists as one of the most valuable of drugs. This we have already seen to be the case, and all that we further need to emphasise, is the fact that when hair passed from medicine to alchemy, its virtues were still ascribed to magical association with the human body. On this point, the 13th century alchemical treatise *De Anima* supplies us with ample evidence.

"Dixit Abuali: Et loquar in hoc capitulo de capillis. Natura illorum frigida et sicca, et intrant in hoc magisterio. Si quis dividat eos per 4. partes,[3] aqua illorum indurat mercurium. Capilli sunt in multis modis, de homine grandi, de homine parvo, de mediocri, de bestiis, sed de bestiis non intrant in hoc magisterio, et sunt ibi de pilis hominum, et sunt de colera nigra, de colera citrina, et de flegmate, et de sanguine: et capilli qui intrant in magisterio ad habendum lapidem, sunt de juvenibus de XIII annis,[4] qui sunt de

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[1] The snake was always associated with Æsculapius in classical times, while the same idea is seen in the belief of the ancient Arabs that medicinal waters were inhabited by *Jinn* of serpent form (Robertson Smith, *Religion of the Semites*, p. 168). The following extract from Ambrose Pary shows that the virtue of theriac in curing the bites of poisonous animals was ascribed to the viper's flesh that it contained, like being supposed at that time to cure like. "At Galeni authoritas (*Lib. de the.*) eam opinionem convincit, scribit enim theriacam si huic vulnerum generi ante imponatur, quàm venena ad partes nobiles pervenerint, magno præsidio esse. Convincit et ratio: theriacæ enim compositionem viperina caro subit, quæ substantiæ similitudine allicit, et ut magnes ferrum, aut ambra paleas evocat." (*Opera Chirurgica*, Frankfort-on-Main ed., 1594, p. 580).

[2] Manget's *Bibliotheca Chemica Curiosa*, Geneva ed., 1702, II, p. 49. Manget prints 'Tyriaca' for 'Theriaca' throughout the passage quoted.

To this may also be added the statement of the 11th cent. Syrio-Arabic MS. (Duval's trans., Berthelot, *La Chimie au Moyen Âge*, II, pp. 182 and 183.

"L'élixir ressemble au poison, à cause de sa violence et de sa subtilité; car il altère et dénature des corps nombreux et agglomérés, lorsqu'on fait agir sur eux une petite quantité de cet élixir.

"Il ressemble à la thériaque à cause de sa force et de son utilité, car il fait revivre les corps atténués et réduits à l'état devisé."

The comparison of the elixir with a poison was a Greek idea, *Ἰός* being a synonym amongst the Alexandrian alchemists both for the Elixir and also for the product of the combustion ('killing') of metals (cf. Berthelot, *Collection des Anciens Alchimistes Grecs*, I, Introd., p. 254).

[3] *Viz.*, Earth, Air, Fire and Water.

[4] The idea is the same as that of the Greek olive-farmers alluded to by Palladius. "With ancient Greek husbandmen it was a maxim that olives should always be planted and gathered by pure boys and virgins; the uncommon fruitfulness of the

sanguine, et de 4. humoribus, et fumus capillorum reddit cuprum de colore auri. Valitudines eorum multæ sunt: quia faciunt de eis [per] botum barbatum,[1] mixti tamen cum terra magisterii.[2] Intellige."[3]

"Postquam scis lapidem, dicam tibi tempus colligendi et de quibus debes colligere. Tempus est illud in quo colligis sanguinem et ova, scilicet Martius, Aprilis, September et October:[4] quia in illo tempore sunt humores æquales, et de quibus colligas sunt pueri 6. annorum usque ad 15. annorum [usque ad 30. ut dicit Adimuerat], et non habeant in seipsis humorem majorem; et capilli qui non sint nec albi, nec nigri, nec rubei, nec citrini, nec grossi, nec tenues, nec crispi, nec plani, nec de fœmina; sed sint æquales in totis suis proprietatibus.

"Ablutio. Et postquam collegeris, debes lavare illos in aqua salsa, et agita ibi eos, donec sint albi."[5]

Nothing could be plainer from these quotations than that the virtue of the hair lay in its supposed magical qualities; while at the same time they afford some indications of the ways in which the more strictly alchemical properties of hair were utilised.

The two that the writer specially signals out for notice (beyond the curious statement that the fumes of hair turn copper yellow[6]) are (*a*) its employment in the manufacture of lutes and crucibles; and (*b*) the utilisation of the fact that the aqueous distillate of hair possesses the property of attacking or 'killing' mercury. Of those included under the phrase 'multæ valitudines,' and referred to elsewhere in the *De Anima*, there may also be mentioned (*c*) the use of hair in the manufacture of brass; and (*d*) its value as a 'cerating' agent.

In the first of these cases, the admixture of hair with the clay, though primarily made, no doubt, on account of its binding qualities, probably affords another indication of a belief in its magical virtues, since any sort of vegetable fibre would have served as well. The Egyptians of the time of Ramses II used straw in the manufacture of bricks, while at the present day, a bearer in a chemical laboratory in India, if told to lute on a crucible lid, will mix jute with the moist clay that he intends to use for the purpose.

The employment of hair in the preparation of brass will be best understood by a quotation of the receipt given on p. 307 of the *De Anima*.

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olive-trees at Anazarbus in Cilicia, was attributed to their being tended by young and innocent children" (Frazer, *Golden Bough*, II, p. 211): cf. also *antea*, p. 27, note (9); p. 35, note (1); and next paragraph of text.

[1] The *būṭ-bar-būṭ* (بوط بر بوط 'crucible on a crucible') mentioned by the author of the *Mafātīḥu-l-'Ulūm* and other authorities of the same time as a common piece of alchemical apparatus. The description given in the *Mafātīḥu-l-'Ulūm* (*ed. cit.*, p. 256) is as follows: "It consists of two crucibles, one placed on the other, the upper having a perforated bottom, and the joint between the two being well luted with clay. The body to be purified is melted in the upper crucible, and drops through into the lower one; while the dross and impurity remains behind." A description of the apparatus is also given on p. 339 of the *De Anima*.

[2] The *Ṭīnu-l-Ḥikmah* ('Clay of Wisdom') of the Arabs. This was generally a mixture of stone-free clay with chopped hair and dung (cf. Berthelot, *La Chimie au Moyen Âge*, II, pp. 152 and 166).

[3] *De Anima*, Dictio V, Cap. XX (*Artis Chemicae Principes, ed. cit.*, p. 151).

[4] Spring and Harvest, when the Spirits of Nature are strongest and most active (cf. Frazer, *op. cit.*, III, § 8, *passim*).

[5] *De Anima*, Dictio VII, Cap. III (*op. cit.*, p. 414).

[6] Cf. also *antea*, p. 35. The copper is actually blackened.

"Accipe de tutia[1] unam libram, de capillis hominis libram semis, pisa totum, et fac cum aceto distillato, et fac panes de tribus unciis, et sicca ad solem, et cum fuerint sicci, accipe de cupro tres libras, et funde, et jacta ibi duos panes, et agita tantum, donec bene misceatur, et jacta in foveis, et est bonus modus."

The remaining cases merely represent different aspects of a single reaction, since the mixture of compounds produced by the agency of the aqueous distillate from hair was also found to possess the property of readily melting—without any evolution of fumes—when dropped on to a heated metallic plate. Substances answering to this test were said to be 'cerated,' and owing to their loose combination, their particles were supposed to be peculiarly accessible to the transmuting influence of the Elixir.[2]

As regards the actual chemistry of the reactions, there can be little doubt that it depended almost entirely on the ammonium salts that were generated during the combustion of the hair. Cases (*a*) and (*c*) are instances of the use of ammonium chloride[3] as a flux, while in (*b*) and (*d*) the chemical reactions that occur are the formation of a chloride (or sulphide), followed in all probability in the case of mercury by the conversion of the compound first produced into a readily fusible ammonium double salt.[4] It is easy, therefore, to understand—once the belief in the magical equality of hair and its crystalline derivative was supported by proof of their alchemical equivalence—how ammonium chloride quickly usurped the place of hair in alchemical operations. Since sal-ammoniac, when heated in a confined space, often acts like gaseous hydrochloric acid,[5] substances were found to be as easily attacked as if hair had been used—or probably even more so; whilst many of the products of the reaction with sal-ammoniac, *e.g.*, Silver Chloride, were obtained without need of any further treatment in the desired state of ceration.

There is, in fact, a marked parallelism between the history of hair and sal-ammoniac in medicine and alchemy. Just as in the case of medicine the introduction of sal-ammoniac was aided by its physiological effect, so in alchemy the chemical properties of the salt greatly facilitated its adoption. In medicine the idea of the ancient doctor was to oust the spirit of disease by a health-giving human spirit. The object of alchemy, where man takes the place of nature in perfecting a base metal into gold, was to endow the base metal with a soul or spirit (in early alchemical writings, the terms are practically synonymous), whereby it would be forthwith transformed into gold.[6] Fostered as Arabian

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[1] On p. 304 of the *De Anima*, the following definition of Tutia occurs. "Tutia est una materia de terra naturali, afferunt etiam de Ægypto; et quia lapis ille tingit latonem de tali colore, dicunt quod est unus ex lapidibus," *i.e.*, one of the 'Stones' of the alchemists, cf. p. 28 *antea*. Tutia was apparently, therefore, Zinc Oxide, or Carbonate.

[2] *E.g.*, "Signum perfectionis salis hoc erit, si illius granum in laminam argenti ignitam projectum, statim liquabitur. . . . sine ulla expiratione in vaporem (*Theatrum Chemicum*, 1659 ed., IV, p. 408).

[3] Practically speaking, the ammonium salts may be taken as equivalent to ammonium chloride, as in most alchemical operations common salt seems to have been added in addition to the other reagents (cf. the *De Anima, passim*); also *antea*, p. 28.

[4] *E.g.*, Fusible White Precipitate ($NHg_2Cl.3NH_4Cl$), made by the joint action of ammonium carbonate and ammonium chloride on mercuric chloride.

[5] Cf. Watts' *Dictionary of Chemistry*, Morley and Pattison Muir's ed., 1888, Vol I, p. 202, where examples are given of the interaction of ammonium chloride with both metals and oxides.

[6] Ibn Khaldūn, *trans. cit.*, III, p. 207. The Malays still believe that Gold and Tin possess personal souls, which must be conciliated before the prospector can hope to find the metals in any quantity (Skeat, *Malay Magic*, pp. 266 and 271).

alchemy was, under the theistic influences of Ṣūfiism,[1] nothing was likely to be more esteemed as a source of alchemical energy than the human spirit, and accordingly we find the hair (in addition to all other parts of the human body with which spirituality was associated), in full use among the early Arabian alchemists. Subsequently, for the reasons just indicated, the place of hair was largely taken by sal-ammoniac,[2] but, as is evident from the methods employed in its preparation, the magical associations that led to its adoption did not altogether pass into oblivion.

The reasons that brought about the introduction of ammonium chloride into alchemy have now been sufficiently dealt with, and I only propose to add a brief discussion of the source from which the Arabs obtained their knowledge of the alchemical properties of this important substance.

Passing over the improbable assumption that Jābir discovered these properties for himself,[3] the Greek school of Alexandria was the first to suggest itself. Against this, however, the objection may at once be made that hair and sal-ammoniac are barely mentioned by Greek alchemists.[4] Of the Persian school of alchemy, we know little more than that it existed in the early centuries of our era;[5] while India is ruled out of the discussion by the fact that the Sanskrit name नवसार, *navasār*, for sal-ammoniac is of alien origin.[6] Finally an etymological analysis of the Chinese and Arabic names for the salt suggested a possible solution of the problem.

The only derivation of the Arabic *Nūshādur* that has come to my notice, is that it is a corruption of two Persian words نوش دارو *nūsh dārū*, 'life-giving medicine.' This etymology, though of a suspiciously popular character, might have been accepted were it not for the fact that the Chinese name for sal-ammoniac is 硇砂, *nau-sha*.[7] It is hardly likely that if the Chinese had drawn their name for ammonium chloride from the Persian, they would have dropped half of the original name; whereas if the Persians had taken the Chinese name, it is conceivable that the word دارو *dārū*, 'medicine,' might have been suffixed to the Chinese original. Hence the decision seemed to lie in the etymology

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1 Jābir was a Ṣūfī, *e.g.*, the *Fihrist* of Ibn Abī Yā'qūb an-Nadīm (written in 988 A.D.), Flügel's ed., p. 355.

2 Cf., *e.g.*, the *De Anima*, *passim*.

3 Jābir wrote a *Kitābu-sh-Sha'r* ('Book on Hair'). Alchemical pamphlets dealing with 'Plants,' 'Animals,' 'Blood,' 'Urine' and 'Eggs,' are also recorded from his pen (cf. *Fihrist*, *ed. cit.*, p. 356).

4 The most noticeable reference to a Greek belief in the virtue of hair is a parable of Hermes, quoted, ostensibly from a lost work of Al-Fārabī (the master of Ibn Sīnā; † 950), in the *De Anima* (*ed. cit.*, p. 55). Hermes is represented as taking his son on his shoulder and exclaiming 'The Stone is in him' meaning thereby—so the commentator says—'in his hair and blood.' It is, to say the least, doubtful, and not supported from actual Greek authorities.

5 A treatise written in Pahlawī by an alchemist named Jāmāsb, for Ardashīr, the founder of the Sāsānian dynasty (226–241 A.D.), is recorded in Ḥājī Khalfa's *Kashfu-ẓ-Ẓhunūn* (Flügel's ed., III, p. 384).

6 Cf. Rāy, *History of Hindu Chemistry*, p. 54, note (1).

7 Hanbury, (*Pharmaceutical Journal*, VI, 1865, p. 514) has shown that though occasionally common salt is offered as a substitute, the true *nau-sha* of the Chinese is ammonium chloride. It is said in Pekin to be obtained from certain volcanic springs in the province of Sze-chuen, and in Tibet. The first notice of the similarity between the Chinese and Urdu names for sal-ammoniac, is due to Porter Smith (*Materia Medica and Natural History of China*, Shanghai; and Trübner, London, 1871, p. 190). I should add that I am indebted to Mr. D. Hooper of the Economic Section of the Indian Museum for affording me an opportunity of quoting the details of Hanbury's papers that are given in this and the following note. Porter Smith only makes very casual references to Hanbury's work.

of the Chinese word. If it can be shown to consist of Chinese roots, the word *Nūsẖādur* is probably of Chinese origin ; if not, the Persian etymology may be accepted.

As regards the second portion of the name, Porter Smith in the preface to his *Materia Medica and Natural History of China* states that the character 硇, *Sha*, is connected with, and yet differentiated from, the character for 'Stone' 石 *Shih*. This has been kindly verified for me from Chinese dictionaries by Mr. K. Ohmiya, a Japanese gentleman now resident in Calcutta, though he is unable to agree with Dr. Porter Smith's extension of the meaning into an expression of the appearance and condition of a more or less perfectly crystallised salt. Mr. Ohmiya has also been good enough to ascertain from the same source of information that the character *Nau*, consists of 鹵 to which the meaning 'natural salt' is given ; together with 石 the determinative for 'Stone.' The syllables *nau-sha* appear, therefore, to be capable of complete analysis into Chinese roots.

We are accordingly led to the conclusion that the word *Nūsẖādur* is probably the Chinese *nau-sha*, suffixed by the Persian word *dārū*. The Sanskrit *navasār* would also seem to be simply the Chinese name in a slightly altered form.

No final opinion on the subject can be given without a careful study of the writings of the Chinese school of alchemists that flourished between 200 B.C. and 400 A.D., but this, unfortunately, is out of the question in India.[1] It may, however, be added that the author of the *Fihrist* (written at Baghdād in 988) mentions China amongst the countries for which the honour of being the birth-place of Alchemy was then claimed ;[2] while if it is found on investigation that the Chinese alchemists employed hair and sal-ammoniac in their operations, there is no difficulty in accounting for the subsequent dissemination of their knowledge, since the first Arab embassy visited the Court of China in 651 A.D.,[3] *i.e.* 100 years before the time of Jābir. India too was in constant communication with China from 66 A.D.

I desire to express my great indebtedness to Maulawī Hidāyat Ḥusain, of the Calcutta Madrasah, for his willing help during the preparation of this paper. I have also to thank Dr. N. Annandale, Deputy Superintendent of the Indian Museum, (at whose request the paper was begun), for the valuable criticisms and suggestions that have so greatly eased my labour in a somewhat unfamiliar field.

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[1] Even Edkin's paper (*Trans. of the China Branch of the Royal Asiatic Society*—Hong Kong—Part 5, 1855, Art. IV) is not available in Calcutta. I have chiefly drawn my information regarding this Chinese School from Hanbury's account of Edkin's paper, in his *Notes on Chinese Materia Medica* (*Pharm. Journ.*, II, 1860-1861, p. 115), as well as from various references in Bretschneider's *Botanicon Sinicum*. The chief alchemist of the school was Ko-Hung, who died in 330 A.D.

[2] *Ed. cit.*, p. 259.

[3] Bretschneider (*On the Knowledge possessed by the Ancient Chinese of the Arabs and Arabian Colonies*, Trübner, 1871, p. 8, quoting from the Annals of the T'ang Dynasty.

ERRATA.

Page	I,	line 34,	*for* ebullation *read* ebullition.
„	I	„ 40,	*for* rice *read* rue.
„	II	„ 13,	omit comma after the word milk.
„	„	„ 19,	*for* La Chinie *read* La Chimie.
„	„	„ 31,	*for* seeds *read* reeds.
„	„	„ 35,	*for* afflicated *read* afflicted.
„	III	„ 7,	*for* divideded *read* divided.

Appendix to Mr. Stapleton's Paper, Sal-Ammoniac: a Study in Primitive Chemistry.

Translations of Passages quoted in Latin and French.

As the Editorial Committee of the "Memoirs" feel that there will naturally be members of an Indian society to whom the passages quoted by Mr. Stapleton in Latin and French will be unintelligible, and as the author of the paper is not at present in Calcutta, I have added translations (for which Mr. Stapleton is in no way responsible) of these passages in an appendix to be issued with the paper.

N. ANNANDALE,

Anthropological Secretary of the Asiatic Society of Bengal.

I. pp. 25-26 (from Pliny, *Hist. Nat.*, Book xxxi, Chapter 39).

"King Ptolemy discovered [native salt] near Pelusium while preparing a camp. Then, following this example, men began to find it by digging in the sand in the waste places between Egypt and Arabia; likewise in dry localities throughout Africa as far as the Oracle of Ammon. (This substance grows with the phases of the moon by night.) The country about Cyrene is famous for its "Ammoniac," so called because it may be found beneath the sand (Greek *ammos*). In colour it resembles the *aluminum* called "split *aluminum*," growing in long pieces, not being transparent, having an unpleasant taste, but being efficacious in medicine. The quality considered best is very clear and has a straight cleavage. A notable thing is told of it, namely, that while it remains in the cavities in which it originates it is extremely light, but that when brought out into the glare of day it immediately increases in weight to an almost incredible extent. The reason why is obvious—the damp exhalations of the mines buoy it up as water would do. It is commonly adulterated with the Sicilian salt we have called Cocanic; also with that of Cyprus, which is extraordinarily like it. Salt is also dug in Spain beyond Egelasta, being found in lumps which are barely translucent. Nowadays most doctors give this kind the palm over all others. Wherever salt is found the soil is barren and produces nothing. So much for salt which appears spontaneously."

II. pp. 28-29 (from the '*De Investigatione Perfectionis*').

The preparation of sal-ammoniac.—Sal-ammoniac is made of five parts (or two) of human urine, one part of human sweat, one of common salt, and one-and-a-half parts of the soot from logs or from sticks heated to dryness with all that appertains to them. Sublime therefrom the true and efficacious sal-ammoniac, dissolve again in sweat, congeal, and sublime once more from common salt: the preparation is then complete. Or let it be first triturated with a preparation of purified common salt, then sublimed in a tall *aludel* until it is entirely extracted pure; then let it melt in a porphyry vessel (?) in the open air, if this can be done with its natural water. Otherwise, preserve it sufficiently sublimed and pure.

III. p. 29 (from Leclerc's French translations, Vol. iii, p. 380).

IBNU-T-TILMĪḌH.—There are two kinds of it, a natural and an artificial salt. The natural kind comes from hot springs in the mountains of Khorassan, which are said to have a very intense ebullation. The natural salt is the better of the two.....and is as clear as crystal. EL-GHAFEKY.—It is a kind of salt.....It is so strongly saline that it bites the tongue sharply. There is also a kind which is produced from the soot of baths, especially of baths heated by means of dung fires.....It is efficacious against spots on the eyes, prevents the falling forward of the uvula on the gullet, and is useful in the case of sore throats. Dissolved in water and poured out within a dwelling, it scares away reptiles; poured into their lair, it kills them. Triturated with rice water and taken into the throat, it kills blood-suckers. SHERIFF EL-EDRISSY.—Prepared with oil

and rubbed on in the bath over an itch of the atrabilious kind, it causes the disease to disappear. Masticated and projected into the mouths of snakes and vipers, it kills them instantaneously. Mixed with oil of eggs and used as an ointment for white leprosy, after preliminary lotions, it cures the disease, especially if the treatment is prolonged."

IV. pp. 34-35 (from Leclerc's French translations, Vol. II, pp. 334-335.)

Ar-Rāzi in *The Continent.*—Aṭhour the Wise says that man's hair soaked in vinegar and applied to the bite of a mad dog, cures it in a moment. Soaked in pure wine and oil and applied to a wound on the head, it prevents inflammation. The smoke of burnt hair inhaled combats hysteria and uterine discharges. Burnt hair triturated with vinegar is applied with benefit to pimples. Triturated with honey and used as an embrocation in the case of aphtheses of children, it has a marked success. If it is triturated with incense and spread on sores on the head after anointing them with pitch, or even if it is beaten up with honey and applied to the sores, it cures them. If burnt hair is triturated with litharge and rubbed in for the itch and for irritation of the eye, it causes them to pass away. Burnt hair triturated with sheeps' milk, butter and rubbed in on ecchymoses and swellings caused by flies, is a certain remedy. Mixed with oil of roses and injected into the ear it cures ear-ache. Ibn Zuhr's *Properties.*—The hair of a young infant, before it has acquired consistency, carried on his person by a man who is gouty or has been stung by a scorpion, relieves him and takes away the pain. Fumigation with human hair makes objects which the smoke reaches yellow. Water distilled from it rubbed on the head, causes hair to grow.

V. p. 35 (from Berthelot's *La Chimie au Moyen Age*, Vol. II, p. 155).

"We can bring it about that a vegetable turns into an animal, and that an animal produces another (kind of) animal. Take, for example, hair. When human hair putrifies, after a time it becomes a living snake. In the same way, ox's flesh changes into bees and hornets; eggs become dragons; ravens engender flies. Many things in putrifying and changing engender different kinds of animals. From the putrefaction of plants certain animals originate. Basil, as it putrifies, engenders venomous scorpions. In the same way a great number of plants produce animals as they putrify and change."

P. 35 (from the same work, Vol. III, p. 255).

"We have seen several times over, that it is possible to create animals without knowing the specific differences between them; with earth and straw it is possible to cause scorpions to be born, and with hair, to make snakes. Take a further case (of artificial production) mentioned by authors who deal with agriculture: when bees become scarce, a swarm can be extracted from the dead body of a calf. Let us also cite the way in which seeds are produced by planting the horns of hoofed animals, and how sugarcane is produced by filling the horns with honey before planting them."

VI. pp. 36-37 (from the *Pretiosa Margareta Novella*).

"Thus also this stone works in leprous metals, and therefore it is sometimes called poison, sometimes the "Antidote." For the corrupt metals, which are four, are afflicated by four kinds of leprosy, from one or other of the four corrupt humours, and their disease is cured by the said stone, just as human leprosies are cured by the right kinds of snakes.....Gold, however, is the purest metal, and the noblest, and of the evenest humour, like the sun among the stars, and like the pure blood in the body of a man of temperate complexion, lacking all extraneous matter and having in itself the sum of health. And so art, following nature, wishes to cure all things with this stone [it is both poison and the "Antidote"] and to transform them into gold alone, as nature does. ..... Hali says too in his *Secrets*, "This is the red sulphur, shining in darkness. It is the red hyacinth, the flame of venom, the murderer and the victorious lion, the evil-doer, the cleaving sword, the Antidote healing all infirmity," etc. ..... Haly says, "This stone is the life of the dead and their reformation: it is also a medicine which preserves and purges

the body," etc. ..... Morienus says, " The elixir, however, is a medicine composed of several ingredients, and verily this medicine heals the weaknesses of the metals, just as the " Antidote " heals the weaknesses of men. Hence it is often called poison by some; because, just as poison in the human body, so the elixir in the metallic body," etc.

VII. pp. 37-38 (from the treatise " *De Anima.*")

Abuali said; " I will speak in this chapter about hair. Its nature is cold and dry, and it enters into this mastery. If it is divided into its four parts, the water thereof hardens mercury. Hair is of many kinds, hair of a tall man, of a short man, of a middling man, of beasts ; but that of beasts does not enter into this mastery and the concern thereof is of human hair, both of black and of yellow complexion (?) of phlegmatic and of sanguine humour. Now the hair which enters into the mastery of the getting of the " stone " is that of youths of 13 years, who are sanguine, of the four humours, and the smoke of their hair makes copper of the colour of gold. Its powers are many; because they make of it by the *būṭ-bar-būṭ*, mixed, nevertheless with the earth of the mastery. Understand (the matter, if thou cans't).

The Ablution thereof.—And after thou hast collected it (the hair), thou must wash it in salted water, and shake it, until it be white.

VIII. p. 39. (from the *De Anima*, p. 307).

" Take of " *tutia* " one pound, and of human hair a pound-and-a-half, grind it thoroughly, have it distilled with vinegar; make thereof cakes of three ounces ; dry in sunlight. When they are dry, take of copper three pounds, melt it and cast therein two of the cakes ; shake it a little, until it is well mixed, and spread it out in small pits. This is the right way.

Memoirs of the Asiatic Society of Bengal.

1905.

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL.

VOL. I, No. 3, pp. 43—45.

THE SIMILARITY OF THE TIBETAN TO THE KASHGAR-BRAHMI ALPHABET.

BY

THE REV. A. H. FRANCKE.

(*WITH FIVE PLATES.*)

Smithsonian Institution,
OCT 12 1906
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The Similarity of the Tibetan to the Kashgar-Brahmi Alphabet.

(With 5 plates.)

By THE REV. A. H. FRANCKE.

[Read 3rd May, 1905.]

Although it has never been doubted that Tibet received her alphabet from India, scholars have been at variance with regard to the question, which of the various Indian scripts may be regarded as the mother of the Tibetan characters? According to H. A. Jäschke, the Tibetan alphabet was derived from the Lanthsa alphabet, and according to Sarat Chandra Das, from the Wartu characters. Although the Lanthsa, as well as the Wartu, shows many similarities to the Tibetan alphabet, both these alphabets are surpassed in this respect by the Kashgar-Brahmi characters.

I am offering for comparison five plates of alphabets in seven columns. In the first column the ordinary Tibetan 'headed' characters are given; the 'headless' characters of the second column are those which are used for ordinary letter-writing and every other kind of secular writing; the ancient *dbu-med* (or headless) characters of the third column were collected from the ancient rock-inscriptions of Ladakh; the Kashgar-Brahmi characters of the fourth column were copied from Dr. A. F. R. Hœrnle's Plate IV. of his Weber MSS., *J.A.S.B.* Part I. No. 1, 1893, and from Professor E. Leumann's 'Eine von den unbekannten Litteratursprachen Mittelasiens,' *Mémoires de l'Académie*, Vol. IV. No. 8, St. Petersburg; the Wartu and Lanthsa characters of the fifth and sixth columns were copied from Sarat Chandra Das' 'Sacred and Ornamental Characters of Tibet,' *J.A.S.B.*, Vol. LVII. Part I; in the seventh column we find the ordinary Indian Devanagari characters.

From the plates we learn at the first glance that the following Tibetan and Kashgar-Brahmi characters are of a striking similarity: K, Kh, g,[1] ng, c, ch, j, ny, t, th, d, p ph, b, y, r, l, sh, s, h.

Properly speaking, there are only two characters in the whole alphabet which it is difficult to reconcile in their Tibetan and Kashgar-Brahmi forms: m and n. But it is not at all impossible that in the Kashgar-Brahmi MSS. new forms of m and n will be discovered which exhibit a closer relationship to the Tibetan characters than the forms known to me at present.

Individual Tibetan Characters.—There are several characters in the Tibetan alphabet which do not occur in the Indian alphabet. Besides the palatals c, ch, j, the Tibetan possesses the sounds ts, ths, and dz, the characters of which are distinguished from the characters of the palatals by an additional stroke. Although the pronunciation of the Indian palatals was ts, ths, dz, instead of c, ch, j, in the north-western districts of India, it was not the Tibetan forms of ts, ths, and dz, which were directly derived from the Indian characters, but the Tibetan palatals. The Tibetan *w* is a combination of *l* and *b*; we may say: it is a *b* with a prefixed *l*. Also b with other prefixes may become a *w*, or

[1] The dot of the Brahmi g became a noose in the Tibetan g.

at any rate a *v*. Thus the West-Tibetan pronunciation of the word *dbang*, power, is *wang;* and, as has been stated in my notes on a language map of West Tibet, there are several dialects in which the pronunciation of *sb* or *rb* is *v*. The Tibetan letter *zh* was derived directly from the Tibetan sh (ancient *dbumed* form) by omitting the stroke on the left side of the *sh*. There is some probability that the Tibetan letter *z*, which does not occur in the ordinary Indian alphabet, was developed in Turkestan. The Kashgar-Brahmi form, reproduced on Plate IV, is taken from Dr. E. Leumann's article, cited above. Professor Leumann's transcription of this character is *z*. The Tibetan vowel-bearers can hardly be derived from Indian prototypes. In the case of *'a* we must remember that this letter was a really indigenous Tibetan letter, the proper pronunciation of which is still uncertain. Its form may be a creation of the Tibetan mind. The form of the Tibetan *a* looks almost like a development of the Tibetan *ya*, and there are a number of words in which an original *y* has been dropped, or been turned into a vowel-bearer *a;* *yang* becomes *ang*, *yid* becomes *id*, *yin* becomes *in*, *yong* becomes *ang*, etc. But in its later development the letter *a* became decidedly similar to the *a* of the Kashmir Takri script, for which reason it was derived from it by General Cunningham. That the letter *a* is one of the latest Tibetan characters with regard to development, is shown by the fact that it is placed at the end of the Tibetan alphabet.

Vowel-signs and compound characters.—That the vowel-signs of the Tibetan and the Kashgar-Brahmi scripts are closely related, is not to be wondered at, because also the other Indian scripts are very similar to both of them in this respect. The Tibetan prefixes *r*, *l*, and *s*, and the Tibetan suffixes *r*, *l*, and *y*, have their closely corresponding prototypes in the Kashgar-Brahmi script.

Headed and headless characters.—As we have seen, there are headed and headless characters used by the Tibetans. When writing on the ancient rock-inscriptions of West Tibet, I was of opinion that the headless characters represented an earlier type of Tibetan writing, and that the headed characters represented an innovation, introduced perhaps by *Srong btsan sgampo*. If it should, however, become evident that the Tibetan alphabet was developed in Eastern Turkestan out of the Kashgar-Brahmi characters, we might be led to believe that both Tibetan alphabets originated at about the same time. The reason is that the Kashgar-Brahmi characters exhibit both types of writing, headed and headless. The material at my disposal has not yet allowed me to distinguish carefully between both types. From Dr. M. A. Stein's Tibetan relics, from Endere, which can be dated, we learn that about 1,200 years ago the headed as well as the headless alphabet were already perfectly developed.

The doubts about the historical accuracy of the Tibetan reports on *Srong btsan sgampo's* and Thonmisambhota's civilizing mission, which I raised in my article on 'The Ancient Rock-Inscriptions of West Tibet' (Indian Antiquary, September, 1903), and which were independently raised by Dr. Barnett in his article 'Preliminary Notice of the Tibetan MSS. in the Stein Collection,'[1] may receive some confirmation from the preceding

[1] *J.R.A.S.* January, 1903.

article. It seems to be perfectly impossible to discover an ancient Indian alphabet in the vicinity of Udyâna which exhibits traces of a closer resemblance to the Tibetan alphabet than the Wartu and Lanthsa characters, although it is possible to reconstruct a list of ancient Indian Brahmi characters (or 'development of the Brahmi characters') taken from various monuments erected at different times and places, which contains prototypes of most Tibetan characters. What is of special interest with regard to the Kashgar-Brahmi characters is, that in this case a whole alphabet of one time and place can be readily compared with the Tibetan alphabet.

Tibetan scholars will have to learn many lessons from sand-buried Turkestan. One of the very strangest is this, that at the time of the Endere inscriptions, the classical language was already an archaic language. It will be well not to take the Tibetan historians too literally.

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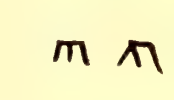
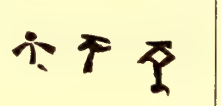
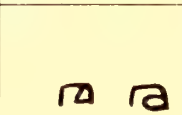
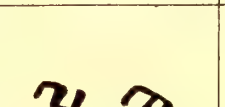
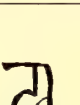
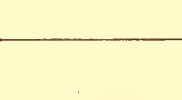
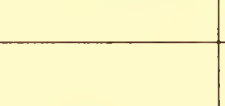
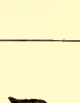
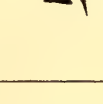
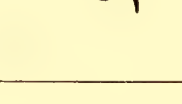
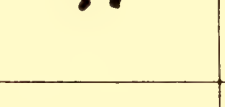
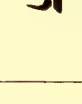
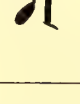
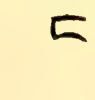
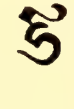
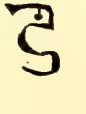
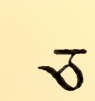
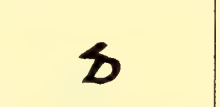
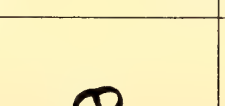
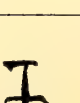
k							
kh							
g							
ng							
c							
ch							
j							

	Tibetan dbu can.	Tibetan modern dbu med.	Tibetan Ancient dbu med.	Kashgar Brahmi.	Wartu.	Lanthsa.	Modern Devanagari.
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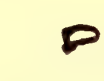
b							
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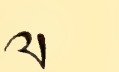
s							

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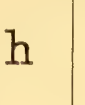
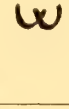
h							
a							

Memoirs of the Asiatic Society of Bengal.

1905

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

VOL. I, No. 4, pp. 47—70.

ALCHEMICAL EQUIPMENT IN THE ELEVENTH CENTURY, A.D.,

BY

H. E. STAPLETON, B.A., B.Sc.,
Indian Education Service,

AND

R. F. AZO,
Instructor in Arabic, Board of Examiner's Office, Fort William.

(WITH ONE PLATE.)

Smithsonian Institution,
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Alchemical Equipment in the Eleventh Century, A.D.

(With one plate).

By H. E. Stapleton, B.A., B.Sc., (Oxon), *Indian Educational Service*, and R. F. Azo, *Instructor in Arabic, Board of Examiners' Office, Fort William.*

[Read August 2nd, 1905.]

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Introduction.

In another paper [1] by one of the authors a list is given of the commoner substances that were employed by Greek alchemists of the 3rd century A.D. in their experiments on the preparation of gold and silver. The main object in inserting this list was to emphasise the absence of the particular substance whose history was being dealt with; but a secondary reason for its compilation was the discovery that the writer had just made of the treatise that will now be described. As this treatise summarises the equipment of a Persian alchemist in the first half of the 11th century, the present paper and the earlier portion of the preceding paper may be regarded as largely interdependent, each forming a commentary on the other.

The present treatise is entitled عين الصنعة وعون الصنعة *'Ainu-ṣ-Ṣan'ah wa 'Aunu-ṣ-Ṣana'ah* (Essence of the Art and Aid to the Workers) and was written at Baghdād in the year 426 A.H. (= 1034 A.D.) by one Abu-l-Ḥakīm Muḥammad ibn 'Abdil-l-Malik aṣ-Ṣālihī al-Khwārazmī al-Kāthī for his patron Ar-Ra'īs Abu-l-Ḥasan 'Alī ibn 'Abdillah. Neither author nor patron seems to be alluded to in the ordinary biographical sources of reference,[2] but a study of the contents of the treatise makes it clear that there can be little doubt as to the accuracy of the date mentioned. The florid style of the author's Introduction, with its ten poetical quotations in less than three and a half pages, is typical of the loss in simplicity that characterises Arabic writings of the 10th and 11th centuries, while the verses that occur at the beginning of Chapter I are completely parallelled by an extract from the works of Abū Aḥmad ibn Abī Bakr al-Kātib (*c.* 925 A.D.; cf. *postea*, p. 50, note (2)), quoted in Tha'ālibī's *Yatīmatu-d-Dahr*. The chief argument, however, in support of the date is the fact that the *'Ainu-ṣ-Ṣan'ah* can be annotated, in all its essential points, from five contemporary sources of alchemical information. These are (*a*) the *Rasā'il* of the *Ikhwānu-ṣ-Ṣafā'* ('Brethren of Purity'), written *c.* 970 A.D.; (*b*) the *Fihrist* of Ibn Abī Ya'qūb an-Nadīm, written 988 A.D.; (*c*) the second volume (on Drugs) of the *Qānūn* of Ibn Sīnā (Avicenna), written *c.* 1021; (*d*) two Syrio-Arabic treatises now in the British

[1] *Memoirs* A.S.B. I, pp. 25-41.

[2] *E.g.*, Tha'ālibī, Yāqūt, Ibnu-l-Athīr, Ibn Abī Uṣaibi'ah, Ibn Khallikān, Ḥājī Khalfa, and Brockelmann.

Museum, that were edited and translated by Duval, and published in Vol. II of Berthelot's *La Chimie au Moyen Âge*; and (*e*) the 10th Section of the *Mafātīḥu-l-'Ulūm* of Al-Khwārazmī, written *c.* 976 A.D.

The last-named author may indeed be the Qāḍhī Abū 'Umar al-Khwārazmī mentioned in the short list of alchemical experts that is given at the end of the Introduction to the *'Ainu-ṣ-Ṣan'ah*. This list, which mentions no alchemist later than the 10th century, also contains a name, Andria al-Ḥakīm, that only seems to occur elsewhere in the alchemical section of the *Fihrist*.

The present treatise forms part of a MS. volume of alchemical essays in the Library of His Highness the Nawab of Rampur, and from the colophons at the end of some of the other treatises in the volume, the original MS. seems to have been mainly the work of a copyist travelling in Armenia (*e.g.*, to the town of Sīwās) and Mesopotamia (Baghdād and Mosul) in 1283 A.D. (682 A.H.). The following may be quoted as an example:—

تيسر الفراغ بمدينة السلام منتصف شوال سنة اثنتين وثمانين وستمئة على يد محمد بن ابي الفتح بن ابي منصور بن محمد الكاشي غفر الله له ولوالديه

., Finished at Madīnatu-s-Salām in the middle of *Shawwāl* in the year 682, by the hand of Muḥammad ibn Abi-l-Fatḥ ibn Abī Manṣūr ibn Muḥammad al-Kāshī. May God pardon him and his parents!"

The volume, however, has suffered much damage from replacement, and probably no part of the MS., as we now find it, is earlier than the 15th century.[1] About half the book—the older portion—is written in a clear *Naskhī* hand, while the remainder, which is interpolated in the middle of the *Naskhī*, is in *Nasta'līq*.

From the fragment of an index, it is evident that our treatise was originally followed by four other alchemical pamphlets, but these have all disappeared and the *'Ainu-ṣ-Ṣan'ah* now occupies the last 19 pages of the MS. It is unfortunately incomplete, the sixth and seventh chapters, together with a portion of the fifth, being missing; but even in its mutilated state, it forms a welcome addition to our previous knowledge of alchemical methods and equipment in the 11th century. Owing to the incompleteness of the treatise, nothing more than an analytical translation has been attempted; but this has enabled much of the superfluous matter in the Introduction and subsequent chapters to be removed. The corresponding Arabic text will be found at the end of the Analysis.

Special attention may be drawn to two points in connexion with the *'Ainu-ṣ-Ṣan'ah*. The first is the evidence supplied by Chapters III and IV of the great importance that was attached to weights in chemical operations 700 years before the time of Black and Lavoisier. The second is the remarkable similarity that has been observed between the drawings and description of the *Uthāl* (Aludel) and its furnace, as given on the last page of the Rampur MS., with those contained in the *Summa Perfectionis Magisterii* of the author whom M. Berthelot terms the Latin Jābir. So striking indeed is the resemblance between the two that we feel compelled to add a few words of criticism regarding M. Berthelot's

[1] Dr. Ross, of the Calcutta Madrasah, has been good enough to examine the volume for us, and confirms this date.

belief in the recent origin of the alchemical knowledge current in Europe during the 13th century.

To explain our meaning, we will quote two references to the Aludel that are to be found on pp. 565 and 569 respectively of the edition of the *Summa* that appeared at Basle in 1572 under the title *Artis Chemicae Principes*. Of the three figures, Nos. 1 and 3 are illustrations of a copy of the *Summa* that exists in Latin MS. No. 6514 of the Bibliothèque Nationale (written *c.* 1300 A.D.);[1] while No. 2—that of the furnace alone—is reprinted for purposes of comparison from the Basle edition of the *Summa*.

"Si igitur volueris multam sublimationis quantitatem elevare, tunc vas aludel tantæ capacitatis invenias, quòd illam suscipiat super fundum, ad elevationem unius palmæ. Ad illud coaptes furnum ut suscipiat aludel in medio sui cum distantia parietum suorum per duos digitos. Et furno facto, facies illi X.[2] auriculas, æquè distantes proportione una, ut una æqualitas sit ignis ad omnes partes illius. Tunc verò stipite ferreo in medio fornacis ex transverso in spondilibus ejus firmato, qui à fundo fornacis distet ad extensionem unius palmæ cum pollice suo, et ad spissitudinem unius digiti, super eo firmetur vas aludel, et circumlinatur ad furnum, quem sequens demonstrat descriptio." (pp. 565 and 566; cf. Figs. 1 and 2).

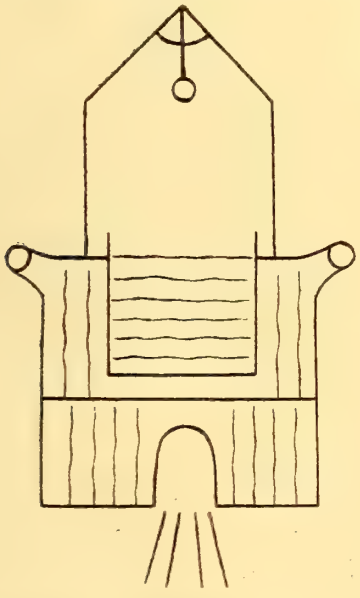

Fig. 1.

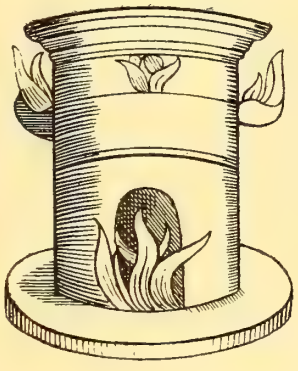

Fig. 2.

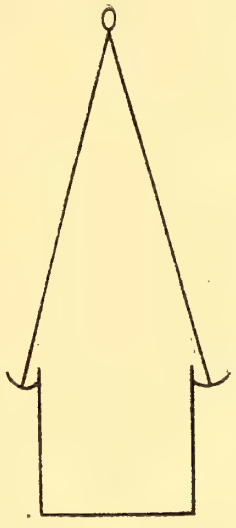

Fig. 3.

"Ex qua materia et qua forma vas Aludel sit faciendum. Cap. XLIIII. . . . Fingatur ergo concha vitrea rotunda, cujus fundus sit parvæ curvitatis, et in medio spondilium ejus formetur zona vitrea circumdans eam, et super illam zonam fundetur paries rotundus æquè distans à conchæ pariete ad grossitudinem cooperculi ipsius conchæ, ita ut in distantia hac cadat paries coopertorii largè sine pressura.

---

[1] Fac-similes of these figures are to be found in Berthelot's *La Chimie au Moyen Âge*, I, pp. 149 and 150.

[2] Probably a mistake for IV, as Fig. 2 shows. Manget, in the reprint of the *Summa* in his *Bibliotheca Chemica Curiosa*, I, p. 532, also reads 'quatuor.'

Altitudo verò hujus parietis sit ad mensuram altitudinis parietis conchæ, aut paulò minus. Formentur verò duo coopertoria ad mensuram hujus concavitatis duorum parietum, æqualia, quorum longitudo sit æqualis, et sit unius spannæ, et figura eorum figura una, scilicet piramidalis, in quorum capitibus duo æqualia sint foramina : unum scilicet in uno, alterum in altero, in quibus ambobus possit cadere major gallinæ penna, ut hîc clarius cernere licebit. Est ergo conchæ vasis intentio, ut possit moveri secundum artificis voluntatem coopertorium illius, et quòd junctura sit ingeniosa, per quam sine lutatione aliqua non pateat spiritibus egressio." (pp. 569 and 570 ; cf. Fig. 3).

M. Berthelot's comment on this apparatus furnishes an excellent epitome of the views that we desire to criticise. He says :—

" Ce sont les formes mêmes des appareils du XIII^{e} siècle. Mais on n'est pas autorisé à les faire remonter plus haut, ni surtout à les attribuer à Geber, comme on l'a fait jusqu'à présent. En effet, les traités arabes authentiques qui portent le nom de Geber ne renferment ni ces figures, ni leur description, ni l'exposé précis des opérations qui s'y accomplissent. Cependant, elles offrent de l'intérêt, même lorsqu'on en limite la date au XIII^{e} siècle." [1]

To these statements the *'Ainu-ṣ-Ṣan'ah* lends no support, whilst the similarity in principle between the aludel and furnace described above, and the *uṯhāl* and *mustauqad* of the last pages of our analysis, proves that so far as instruments are concerned, M. Berthelot has over-estimated the inventive capacity of the Middle Ages. Agreeing, as we do, with M. Berthelot that the *Summa* was finally moulded into its present form during the 13th century, two deductions seem necessarily to follow from this similarity. One is that the contents of the *Summa* were derived from previously-existing Arabic works on alchemy : the other, that in the 200 years or more that elapsed between the writing of the *'Ainu-ṣ-Ṣan'ah* in Baghdād and the compilation or editing of the *Summa* in Spain little or no progress in alchemy occurred.

If these deductions are true, what is to prevent the ultimate affiliation of the *Summa* with an authentic work of Jābir ? [2]

In conclusion, we desire to express our best thanks to His Highness the Nawab of Rampur for permission to study and publish extracts from the MS. in which the *'Ainu-ṣ-Ṣan'ah* was found. We have also to acknowledge the assistance that Maulawī Hidāyat Ḥusain, of the Calcutta Madrasah, has given us in the preparation of this paper.

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[1] *Loc. cit.* p. 149.

[2] It should be added that M. Berthelot's disbelief in Jābir being the author of the *Summa* is mainly based on a consideration of the mystical *Kitābu-r-Raḥmah* (Book of Pity). So far as we can ascertain he has never replied to Leclerc's suggestion that the original of the *Summa* is the *Kitābu-l-Khāliṣ* (Book of the Essence), of which a copy exists in Arabic MS. No. 1083 of the Bibliothèque Nationale (cf. *Histoire de la Mēdecine Arabe*, I, p. 74 ; Ḥājī Khalfa's *Kashfu-ẓ-hZunūn*, V, p. 79).

II. Analysis of the *'Ainu-ṣ-Ṣan'ah.*

Introduction.

The first three-and-a-half pages of the treatise are devoted to poetical and rhetorical laments on the intellectual poverty of the age, but more especially on the ill-repute into which Alchemy had fallen. This, Muḥammad ibn 'Abdi-l-Malik finally concludes, must be due to the repeated failure of unqualified experimenters. Such men, on discovering the difficulties of the path, are apt to deny the truth of the Art, thus giving the common people—who are always opposed to what they do not understand—an occasion to mock.

The author continues :—

"But if they had followed the right path and learned its inmost truths, they would not have held it to be false, nor have belittled the intelligence of its followers. For this reason I have composed the present work dealing with the subject, at Madīnatu-s-Salām (*i.e.*, Baghdād) in the year 426 (= 1034 A.D.).[1]

It is divided into seven concise chapters.

The First Chapter deals with the Names of Substances, their Classification, and their division into 'Spirits' and 'Bodies.'

The Second treats of their 'Qualities'[2] and the characteristic properties of each of them.

The Third deals with the Proportions and Minimum Amounts of Substances to be used in the Art.

In the Fourth a distinction is drawn between those substances that are suitable for 'the White' and those for 'the Red.'[3]

The Fifth gives an account of the Instruments of the Art and describes the utensils that are necessary for pursuing it.

The Sixth is on the substitution of one substance for another whenever some ingredient is unprocurable.

The Seventh describes two Major Operations for the encouragement of those who desire to benefit by the Art. Concise statements of easy processes in every useful branch of the Art are also given. These I insert in order that the book may form a complete whole.

I have called it *'Ainu-ṣ-Ṣan'ah wa 'Aunu-ṣ-Ṣana'ah* (Essence of the Art and Aid to the Workers), and I have included in it whatever I have personally verified by experiments carried on at the cost of much bodily weariness. I have laboured at it all the days of my life, hoping for the reward of God and the thanks of men, and in order to win the approval of him for whose favors I am thankful [. . . . . Four lines of hyperbole

---

[1] *I.e.*, two years before the death of Ibn Sīnā.

[2] طبائع *ṭabā'i'*, *i.e.* whether they are hot and cold, dry or moist.

[3] *I.e.*, the elixirs by means of which gold and silver can be made.

omitted . . . . .] Ar-Ra'ís Abu-l-Ḥasan 'Alí [ibn] 'Abdillah[1]—May God prolong his precious life and overthrow his enemies!

Be it known that the sages and learned writers such as:

' Andria the Sage,[2]
Mūsā ibn 'Imrān al-Kalīm (Moses),[3]
Khālid ibn Yazīd ibn Mu'āwiyah,[4]
Abū Zayd al-Balkhī,[5]
Ma'mar al-Juzjānī,[6]
and the Qāḍhī Abū 'Umar al-Khwārazmī,[7]

who were believers in this science and to whom the interpretations of this Art are due, in addition to many other experts of the first rank, have ceaselessly laboured at the elucidation of obscure points, with the intent that men might derive benefit from their works and profit from their writings—men who, had they been left alone to their own intelligence and common-sense, would not have acquired even the rudiments of this noble science."

After praising at some length these pioneers of Alchemy, Muḥammad ibn 'Abdi-l-Malik proceeds to state that although the materials of this Art are known in every country and sold by every druggist, they are referred to in the Art by enigmatical names.[8] His object, he says, is to explain the Art for the benefit of all men generally, and for the Ra'ís in particular, but at the same time he points out that such knowledge should only be taught to people who are worthy of it.

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1 This patron of Muḥammad ibn 'Abdi-l-Malik was probably one of the nobles at the court of the Buwayhid Prince Jalālu-d-daulah, who was then overlord of 'Irāq and resident at Baghdād.

2 Two alchemical works by an author, or authors, of this name are mentioned in the *Fihrist* (Flügel's ed., p. 354). In one case, the author is said to have been an inhabitant of Ephesus, who dedicated his book to Nicephorus. If this Nicephorus is the first Emperor of that name, the 'Roman Dog' of Hārūnu-r-Rashīd, the date would be *c.* 805 A.D.

3 Moses is mentioned as an alchemist (*a*) by An-Nadīm in the *Fihrist*, p. 351; (*b*) in the alchemical MS. of St. Mark's Venice; cf. Berthelot, *Collections des Anciens Alchimistes Grecs*, I, Introd., pp. 111 and 175.

4 Abu Hāshim Khālid ibn Yazīd ibn Mu'āwiyah ibn Abī Sufyān al-Umawī, "the first (among the Arabs) for whom books on medicine, astrology, and alchemy were translated (from foreign languages into Arabic)," † 704 A.D.; cf. *Fihrist*, p. 354, also p. 224, where he is said to have obtained his translations of alchemical books through the agency of Stephanos the Elder; Ibn Khallikān (De Slane's trans.), I, p. 481, who states the later tradition of his having learnt the Art from a Greek monk named Marianos.

5 The geographer and pupil of Al-Kindī, the famous Arab philosopher. Al-Kindī disbelieved in alchemy (*Fihrist*, p. 261), and though, as has been noticed by De Boer (*History of Philosophy in Islām*, p. 105), As-Sarakhsī, another of his pupils, was probably an alchemist, the statement of Muḥammad ibn 'Abdi-l-Malik seems to be the first indication that Abū Zayd al-Balkhī believed in the Art. He was, however, a contemporary, and (apparently) a friend of Ar-Rāzī, the well-known alchemical doctor (Ibn Abī Uṣaibi'ah, A. Müller's ed., I, p. 319), and it is not impossible that the following books mentioned in Ḥājī Khalfa's *Kashfu-ẓ-Ẓhunūn* (Flügel's trans.) may have contained some references to the subject.

"4193. Jamlu Maṣāliḥi-l-Anfus wa-l-Abdān, summa rerum animis et corporibus convenientium, auctore Abu Zeid Ahmad Ben Sahl Balkhi, anno 340 (inc. 9 Jun., 951) mortuo" (Vol. II, p. 623). The latter date is an error.

"10328. Kitābu-l-'Ilm wa-t-Ta'līm, liber scientiae et institutionis, auctore Imam Abu Zeid Ahmad Ben Sahl Balkhi, post annum 322 (inc. 22nd Dec. 933) mortuo." (Vol. V, p. 119).

6 Ibn Khaldūn ('Prolegomena,' De Slane's trans., III, p. 71) mentions a Mâmer es-Solemi, who was a denier of predestination. According to De Boer, *op. cit.*, he lived about 900 A.D.

7 It is possible that this is the encyclopædist, Abū 'Abdillah Muḥammad ibn Aḥmad ibn Yūsuf al-Khwārazmī, who devoted the last section of his *Mafātiḥu-l-'Ulūm* to alchemy (cf. Van Vloten's ed., Leyden, 1895, pp. 255-266).

8 For lists of the enigmatical names of ordinary chemicals that were current in Syria in the 11th cent. A.D., cf. Berthelot, *La Chimie au Moyen Âge*, II, pp. 157-160. The following examples may be quoted: Silver, Leprous Gold; Mercury, the Water of Life; Sal-Ammoniac, the Bird of Khurāsān; Sulphur, the Scorpion.

The first chapter is as follows:—

CHAPTER I.

"The Chapter on the Names of Substances, their Classification, and their division into 'Spirits' and 'Bodies.'[1]"

"Abu-l-Ḥakīm Muḥammad ibn 'Abdi-l-Malik aṣ-Ṣāliḥī al-Khwārazmī saith:

They ask me, 'Whence didst thou acquire Wisdom, when thou art of a people who when spoken to are like cattle?'

I reply, 'I have served men of understanding, and he who serves Princes will himself not lack wealth.'

Although my race and birth place is of Khwārazm I am a man of 'Irāq in my ways and disposition

And my spirit will not be satisfied at the imperfection with which the minds of other men of this age are content.[2]

If any created being could have risen to eminence through natural abilities, I of all men would have reached the highest place.

Know—May God strengthen you!—that among these substances are found the Seven Metals (*Jawāhir*). They are: Gold, Silver, Copper, Iron, 'the two Leads' (*i.e.* Lead and Tin)[3], and Mercury.

A second class are the twelve[4] 'Stones,' *viz*: Sulphur, Arsenic Sulphide, 'Qily,'[5] Lime, Sal-Ammoniac, Salt, 'Zāj,'[6] 'Mārqashīthā,'[7] 'Maghnīsiyā,'[8] [Alum, Borax], and 'Martak.'[9] These are the roots of the Art, [and they are eighteen stones].[10]

---

1 The classification is that adopted by the author of the *Mafātīḥu-l-'Ulūm* (*ed. cit.*, p. 259). 'Spirits' are those substances that volatilise on being heated; 'Bodies,' those that refuse to volatilise. Jābir (*apud* Berthelot, *La Chimie*, III, p. 169) apparently divided substances into 'Bodies' and 'Souls' though, on the other hand, he does not seem to have drawn any strict line of demarcation between souls and spirits. This Muḥammad ibn 'Abdi-l-Malik certainly does, as is evident from the contents of the ensuing chapter, but the contradiction between title and contents seems to show that he was not very sure of his ground.

2 Cf. the couplet of Abū Aḥmad ibn Abū Bakr al-Kātib (*c.* 925 A.D.) quoted by Browne, *Literary History of Persia*, p. 466,

"Wonder not at a man of 'Irāq in whom thou seest an ocean of learning and a treasure of culture;
Wonder rather at one whose home is in the lands of ignorance if he be able to distinguish head from tail."

Also *postea* p. 57, note (3).

3 The Greek belief that tin was a modification of lead was still held, the latter being termed 'black lead,' whilst tin was 'white lead' (cf. Berthelot, *La Chimie*, II, p. 156).

4 Jābir (*Book of Pity, apud* Berthelot, *op. cit.*, III, p. 168) explains this number as being due to the astrological association of the twelve substances with the twelve signs of the Zodiac; cf. also the list given in the contemporary Syriac treatise, Berthelot, *ib.*, II, p. 12.

5 Sodium carbonate. Qily is the ashes of certain plants, *e.g.* Salsola and Salicornia (Ar. حرض *ḥurḍh*, or اشنان *ushnān*), which grow near the sea, or in salty places (Ibnu-l-Baiṭār, *Jāmi'u-l-Mufradāt*, Leclerc's trans., I, p. 88; III, p.).

6 Zāj is the equivalent of 'vitriol,' *i.e.*, the sulphates of Iron, Copper, etc., generally in a more or less impure state; cf. Ibnu-l-Baiṭār, *trans. cit.*, II, p 193., and *postea*, p. 56, note (6). In the *Mafātīḥu-l-'Ulūm* Alum is included among the Zājāt.

7 The Greek (and our) Pyrites, cf. Ibnu-l-Baiṭār, *trans. cit.*, III, p. 312. The *Qānūn* of Ibn Sīnā has the following note on it: "Marqashīthā is of several kinds, Golden, Silvery, Copper-coloured, and Marqashīthā of Iron. Each kind resembles in colour the metal after which it is called."

8 Various black or reddish earths used by the Greeks, and following them, the Arabs, in the manufacture of glass, and for collyria (Ibnu-l-Baiṭār, *trans. cit.*, III, p. 329; *Mafātīḥ.*, p. 261). In classical times in Europe, the 'magnes lapis' was divided into male and female varieties, the former being magnetic iron ore (the 'Maghnāṭīs' of the Arabs). Possibly, therefore, the term 'Maghnīsiyā' may here include Maghnāṭīs, which is mentioned later in Chaps. III and IV as one of the 'Stones'; cf. also *postea* p. 55, note (1); p. 53, text, and note (1).

9 Litharge; otherwise called 'Murdāsanj' (*Mafātīḥ., ed., cit.* p. 263; Ibnu-l-Baiṭār, *trans. cit.*, III, p. 311; and the *Qānūn*).

10 MS. corrupt.

Some include among them Malachite, Lapis Lazuli, 'Sh̲ādanj,'[1] 'Tutia'[2] and 'Usrunj,'[3] but exclude Qily, Lime, Salt, Zāj and Alum.

They are also divided into three other classes: 'Spirits,' 'Souls,' and 'Bodies.'[4]

The Spirits are Mercury, Sal-Ammoniac, and similar things.

The Souls are Sulphur, Arsenic Sulphide, and similar things.

The Bodies are Gold, Silver, Iron, Magh̲nīsiyā, and similar things.

He therefore who desires to prepare any one of the Elixirs must take of the Spirit, one; of the Soul, two; and of the Body, one proportion. For example, you take of Mercury, 1 dirham; of whitened Sulphur, or of Arsenic Sulphide, 2 dirhams; and of Iron, one dirham. The Body—which must be completely dissolved—forms, therefore, one-fourth of the whole.

Any elixir which does not contain a Spirit, *viz.*: mercury, and a Soul, which is either sulphur or arsenic sulphide, and a Body, either in a dissolved or coagulated condition, is valueless.

The Spirit and Soul may impart colour, even in the absence of a Body,[5] but the colour they impart disappears on melting. If, however, all three are conjoined, the colour is permanent.

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[1] Haematite, other names for it being 'Shādh̲anah,' and 'Ḥajaru-d-Dam' (bloodstone). Cf. *Mafātīḥ., ed. cit.*, II, p. 262; Ibnu-l-Baiṭār, *trans. cit.*, II, p. 315. *Qānūn*: "Some of it comes from the mine, and some is obtained by the combustion, in a special way, of magnetic iron ore."

[2] A substance of doubtful composition, but most probably impure oxide of zinc, cf. Stapleton, *Memoirs, A. .B.*, I, p. 39, note (1). *Qānūn*: "It is produced from the smoke that rises up when copper is being purified from the stony matter, or lead, that is mixed with it." Hunayn († 873), in his translation of Dioscorides, similarly identifies Tutia with Πομφόλυξ, the volatile deposit that collects in copper furnaces.

[3] Red Lead. Cf. *Mafātīḥ., ed. cit.*, p. 263: "Lead is burnt, and heated in the fire until it becomes red."

[4] The following extract from the *Margarita Pretiosa Novella* of the Italian alchemist Bonus (*c.* 1330 A.D.) affords an excellent summary of the opinions of Arabian alchemists regarding the meaning of the terms 'Body,' 'Soul,' and Spirit.'

"Notandum est, quod antiqui Philosophi hujus artis appellaverunt corpus omne illud, quod secundum sui potentiam naturalem habet fixionem et permanentiam ad pugnam ignis, cum continua perseverantia, et super hoc habet potentiam retinendi secum in commixtione illud, quod non est corpus, et est de sui natura. Incorporeum autem, sive non corpus, sive animam appellaverunt omnem id, quod secundum sui potentiam naturalem, non habet fixionem, nec permanentiam ad pugnam ignis, sed evolatur, et evolat ab igne, et super hoc habet potentiam elevandi in fumum corpus in eo occultum, quod est de sui natura. Et hoc est anima, de qua quidam Philosophorum dixerunt eam esse aerem: quidam ignem: quidam nubem: quidam vaporem incorporalissimum: quidam substantiam tenuissimam: quia secundum analogiam locuti sunt. Spiritum autem appellavererunt omne illud, quod subtiliatum, vel solutum, vel liquefactum ad ignem, secundum sui potentiam naturalem, habet potentiam resolvendi corpus cum anima in vaporem, vel retinendi animam cum corpore ad pugnam ignis, ut non evaporent: quia spiritus cum æqualis fuerit, facit corpus retinere animam: et cum fuerit fortis facit animam separari à corpore, et cum corpore, quoniam sine spiritu nec anima cum corpore manet, nec à corpore separatur cum sit ipsorum vinculum. Una tamen et eadem res in subjecto est habens omnes istas proprietates et operationes. Dum enim in liquefactione permanet ratione subtilitatis dicitur spiritus, sine quo spiritu non potest fieri generatio animæ et corporis, nec conjunctio animæ et corporis. Unde in toto magisterio dominatur spiritus in actu, usque quo generetur anima et corpus. Dum autem volare potest ab igne, dicitur anima: dum autem manere potest in igne, et perseverare, dicitur corpus. Si igitur tempore generationis anima steterit in igne, et prævaluerint vires per vim spiritus, tunc volat ab igne, et trahit secum corpus ad volatum, et permanet operans vacuus à proposito, et expectat quod jam venit, et jam recessit, et nunquam de cætero est venturum, et videtur ei mirabile. Si enim prævaluerint vires corporis, tunc super vires animæ per æqualitatem spiritus, conversum de actu in habitum, tunc corpus retinet animam omnino, nec unquam habet anima vim fugiendi ab igne, et operans tunc habet propositum quod habuerunt tunc antiqui: et tunc spiritus permanet cum eis semper, quandoque in actu, quandoque in habitu: quod totum recipitur ex verbis Platonis in Turba Philosophorum, et in Stellicis ex verbis Senioris, et Haly, et Rasis, et aliorum omnium. Quia igitur hoc corpus perficit et retinet animam, et dat esse sibi et toti operi, et anima in hoc corpore suas vires demonstrat, et per spiritum fit hoc totum, ideo dignè, quamvis metaphoricè dixerunt, corpus formam esse. Unum igitur et idem secundum substantias, quandoque anima, quandoque corpus diversis respectibus" . . . (Manget, *Bibliotheca Chemica Curiosa*, II, p. 41, Note.)

[5] *I.e.*, when the Elixir only consists of 'Spirit' and 'Soul.'

The strongest, and most resistant body towards fire is Maghnīsiyā. If it becomes clear water,—which is Mercury,[1]—and if there be combined with it a pure Soul, you will accomplish by means of it the great operations. You will thus rise to the height of your ambition, attain your object, and become a Chief of Men.

[. . . 4 lines of doggerel verse omitted. . . .]

The essence of the Art is to separate the Spirit from the Soul; next to kill the Soul; then to return the Spirit to it, so that it may revive and become spiritualised and capable of entering into any body.[2] He who deviates from this path will be able to accomplish nothing."

The chapter ends with a quotation of twelve lines of alchemical verse by an anonymous writer—possibly Khālid ibn Yazīd.

Chapter II.

The Second Chapter deals with the 'Qualities' of substances used in the Art, and what characterises each substance in the various operations to which they are subjected.

Thus Iron is said to be: "Cold, Dry, and of great potency in making 'the White,' 'the Red,' and other tinctures of the metals. It is used in sublimations and in solutions, and from it is prepared the Tincture of the Elixir. It is of two kinds, Male and Female, *Fūlād* (Steel) being the male. The latter is that used for the preparation of Gold; while Soft Iron is the female and is used in the making of Silver. The essence of Iron is red, the crust that forms over it is red,[3] and its filings when killed are red also."[4]

The following is a complete list of the substances mentioned. Quotations have only been added whenever anything of special interest occurs.

Gold . . . . .

Silver . . . . .

Copper . . . . Of two kinds, called respectively '*Sard*' and '*Garm*' (Cold and Hot). The former, which is a grey variety,

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1 In the Greek Dictionary of alchemical terms that is to be found in the contemporary Venice MS. (Berthelot, *Collection*, Trans., I, p. 11) one meaning of Magnesia is said to be Female Stimmi (cf. Pliny, *Hist. Nat.*, XXXIII, 33 and 34). This on reduction would yield antimony or lead, both readily fusible to a liquid resembling mercury, and both capable of easy interaction with sulphur or arsenic sulphide. The passage, in fact, seems to carry us back to the Egyptian theory of lead being the mother-metal (cf. Zosimos, *apud* Berthelot, *trans. cit.*, II, p. 167).

It should be observed, however, that the Arabic of the original is faulty, and hence the translation cannot altogether be relied upon. Cf. also *postea* p. 57, text, and note (1).

2 The passage is only a variation of a well-known alchemical shibboleth; cf. Jābir, *Book of Pity, apud* Berthelot, *La Chimie*, III, p. 169.

3 Lit. 'its skin is red.'

والحديد بارد يابس وقوته شديدة في عمل البياض والحمرة وسائر اصباغ الجواهر وفي الاصعادات وفي المياه ومنه صبغ الاكسير وهو لونان ذكر وانثى فالفولاد الذكر وهو المخصوص بالذهب واللين الذرماهن الانثى وهو المخصوص بالفضة . واصله احمر وقشرة احمر وبرادته اذا ماتت كانت حمراء *

	comes from Mosul and the towns of Syria.[1] The latter is red, and is brought from Baṣrah and the towns of Khurāsān.
Iron	(See above.)
Tin (*Qal'ī*)[2] . .	
Mercury	On account of its excessive heat, it has the property of killing lice.[3]
Sulphur	Both Body and Spirit.[4] It unites with heated bodies, and completely destroys them. It also blackens Silver and Copper. Of its different varieties—yellow, white, and red,—the red is only found in the West and is much used in the making of Gold. The White has a strong smell.
Arsenic Sulphide .	Red, Yellow, Bay-coloured (زرج *Daizaj*) and Grey. The '*Daizaj*' is the variety that is used, mixed with lime, as a depilatory. The other varieties after calcination, whiten copper and remove its offensive odour.[5]
Qily	
Lime	
Sal-Ammoniac . .	
Salt	
[Borax	Only mentioned incidentally as a cleansing agent, comparable to salt.]
Zāj	The names of its varieties are: 'Qalqaṭār,' 'Sūrī,' 'Qalqadīs,' and 'Qalqand.'[6]
'Iqlīmia' of Gold, or "Mārqashīthā."	It contains an admixture of Sulphur. . . . After this sulphurous part has been burnt away, . . . it enters into many processes of the Art.[7]

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[1] Evidently a light-coloured alloy. It is probably that referred to in Bar Bahlūl's Syriac Dictionary (written at Baghdād *c.* 950 A.D.) as 'Bīlati,' or White Copper. (Duval's trans., *apud* Berthelot, *La Chimie*, II, p. 123).

[2] It is a remarkable fact that metallic Lead is never alluded to in the experimental chapters of the *'Ainu-ṣ-Ṣan'ah*, although some of its compounds are mentioned.

[3] A similar statement is quoted from Ar-Rāzī by Ibnu-l-Baiṭār (*trans. cit.*, II, p. 229).

[4] Cf. the statement of the contemporary Syriac treatise, published by Berthelot (*La Chimie*, II, p. 73) that Arsenic Sulphide possesses both a soul and a body.

[5] *Daizaj* may also mean 'ash-coloured.' This translation would bring the description into harmony with the present-day Indian custom of using a more or less completely oxidised *Zarnīkh* (arsenic sulphide) as a depilatory. The whitening of the copper would be due to the formation of copper arsenate. For a similar statement, cf. Ibnu-l-Baiṭār's quotation from the pseudo-Aristotle's *Book of Stones*, *trans. cit.*, II, p. 205.

[6] The Greek Χαλκητάριν, Σῶρι, Χαλκῖτις and Χάλκανθον; cf. Bar Bahlūl, *loc. cit.*, p. 124, and this paper, *antea*, p. 53, note (6). For their preparation, see the contemporary Syrio-Arabic treatise, *apud* Berthelot, *La Chimie*, II, pp. 146 and 147.

[7] 'Iqlīmia' (from which our word 'calamine' is derived) is identified by Bar Bahlūl, *loc. cit.*, p. 127, with 'cadmia,' one of the volatile products formed in the manufacture of silver and copper (Dioscorides, *Materia Medica*, V, 84). In the *Mafātīḥu-l-'Ulūm*, *ed. cit.*, p. 263, the word is spelt *Qalīmia* and is defined as the impurity that separates from anything. The alteration of

Maghnīsiyā . . .	Male and Female, the latter variety being black, soft, and of a yielding texture. It is a great colouring agent.[1]
Alum	A desiccating and cleansing agent. The 'alum of redness,' which is commonly called the 'alum of Yemen,' is clear and white. The 'alum of blackness' is grey.
Martak	Very soluble in vinegar.[2]
'Maghnāṭīs' . .	Attracts iron on account of its excessive heat.

Chapter III.

"On the Proportions and Minimum Amounts of Substances that are used in the Art."

"Muḥammad ibn 'Abdil-Malik al-Kāthī[3] saith:

The minimum quantities of these substances that are required for experiments in the processes that I shall describe for the two Major Operations are as follows[4]:—

Pure Gold ...	...	$3\frac{1}{2}$ mithqāls	=	5 dirhams
Pure Silver ...	...	...	=	4 ,,
Red Copper of Khurāsān	...	5 ounces	=	$53\frac{1}{3}$,,
Copper of Mosul ...	...	...	=	1 ,,
'Rūsakhtaj'[5] [of Baṣrah	...	1 ounce]	=	$10\frac{2}{3}$,,
'Zinjār'[6] of Ḥimṣ (Emessa) ...		3 ounces	=	32 ,,

Cadmia into Qalīmia was probably due to a copyist having mistaken the د (dāl) of the transliterated word for a ل (lām). The fact that Pyrites contain sulphur is also mentioned in the alchemical treatise of the 'Brethren of Purity' (*c.* 970 A.D.).

[1] Cf. the following extract from the alchemical treatise of the 'Brethren of Purity.' "Maghnīsiyā is a noble stone, which the Sages held in high esteem and ancient philosophers have praised. By it they were accustomed to perform many works, and dissolve by means of it every kind of 'nature' (*ṭabī'ah*) in mineral bodies. It softens iron and glass. One kind of it is male, and another—which they call *dhālībis*—female. The male is dry, while the female is soft and black. They marry it with the sulphur called ἄπυρον (unburnt), and the mixture is then projected on to tin, which is thus converted into silver" (MS. in the Library of the Asiatic Society of Bengal).

[2] *I.e.*, to form 'sugar of lead.'

[3] Kāth was a large town of Khwārazm, situated on the East bank of the Oxus, 20 *farsakh* (60 miles) from Kūrkānj (Khiva), the capital of Khwārazm: cf. Yāqūt, Wustenfeld's ed., IV, p. 222. The geographer Muqaddasī (985 A.D.) declares that it was one of the filthiest towns he had ever seen, and his description of the intellectual attainments of its inhabitants is the reverse of flattering.

[4] The table of weights used is as follows:—

2	qīrāṭs	= 1	dānaq
6	dānaqs	= 1	dirhams
7	mithqāls	= 10	dirhams
$10\frac{2}{3}$	dirhams	= 1	ounce (*ūqiyyah*)
12	ounces	= 1	raṭl

[5] According to the *Makhzanu-l-Adwiyah* of Mīr Muḥammad Ḥusain, this is a corruption of روی سوختہ *Ruy-i-Sūkhta*, 'Burnt Brass,' *i.e.*, Copper Oxide. See also Ibnu-l-Baiṭār, *trans. cit.*, III, p. 366. Another form of the name is راسخت *Rāsakht*. The *Saktah* mentioned on p. 262 of the *Mafātīḥu-l-'Ulūm* seems to be the same substance.

[6] Verdigris, made by the following process: "Plates of copper are put into the dregs of vinegar and are thus turned green. Then they are scraped, and the process repeated until all the copper has been converted into Zinjār." (*Mafātīḥ., ed. cit.*, p. 263). The method is identical with that described by Dioscorides, V, 91, and is probably copied from Ḥunayn's translation of the *Materia Medica*.

Soft Iron, *i.e.*, the female ...	7 ounces	=	$74\frac{2}{3}$ dirhams.
Steel, *i.e.*, male iron ...	2 ,,	=	$21\frac{1}{3}$,,
Tin (*Raṣāṣ Qal'ī*) ...	...		10 ,,
Mercury[1]	11 ounces	=	$117\frac{1}{3}$,,
Yellow Sulphur of 'Irāq[2] ...	19 ounces and 7 dirhams	=	$209\frac{2}{3}$,,
Yellow Arsenic Sulphide [----]	$2\frac{1}{3}$ raṭls	=	$298\frac{2}{3}$,,
Qily	10 raṭls—out of which $4\frac{1}{2}$ ounces of salt are made[3]	=	1280 ,,
Lime	3 ounces	=	32 ,,
Sal-Ammoniac of Khurāsān[4] ...	2 ounces and 6 dirhams (?)	=	$27\frac{1}{3}$,,
Sweet Salt	2 raṭls	=	256 ,,
Egyptian Zāj[5]	5 ounces	=	$53\frac{1}{3}$,,
Qalqand	3 ,,	=	32 ,,
Iqlīmia of Gold or 'Mārqathīthā'	10 ,,	=	$106\frac{2}{3}$,,
Female Maghnīsiyā—black, soft, and of a yielding texture	...		6 ,,
Alum of Yemen	$7\frac{1}{2}$ ounces	=	$80\frac{1}{3}$,,
'Tinkār'[6]	$\frac{1}{2}$ ounce	=	$5\frac{1}{3}$,,
Martak	1 ,,	=	$10\frac{2}{3}$,,
Maghnāṭīs	16 qīrāṭs	=	$1\frac{1}{3}$,,
Red Armenian Borax[6] ...	2 ounces	=	$21\frac{1}{3}$,,
'Naṭrūn'[6]	...	=	$8\frac{1}{3}$,,
Hens' Eggs	50		...

The total is $2758\frac{1}{3}$ dirhams.

If you need larger quantities of the medicines than those given, multiply the weights

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1 Yāqūt, who completed his geographical Dictionary *Mu'jamu-l-Buldān* in 1224 A.D. states that the best mercury of his time ('better than that of Khurāsān') was drawn from Shīz, a town in the mountainous district S.W. of the Caspian, and S.E. of Lake Urmiyah. Gold, Lead, Silver and Orpiment were also obtained from the same place. Shīz was the reputed birthplace of Zoroaster, and its famous fire-temple was said to have been erected on the spot where the Magus, sent by Khusrū Hurmuz (*sic*) to the Virgin Mary, fell ill and died on his return journey from Bethlehem. The sacred fire of this temple burnt without producing any ashes, and from it the flames of all the other fire-temples in Persia were re-kindled when they became extinct (*ed. cit.*, III, p. 353.).

2 Bar Bahlūl (*loc. cit.*, p. 132) states that this yellow sulphur was procured from Mt. Bārimmā, on the Tigris between Mosul and Takrīt.

3 From the small amount of salt that is produced from 10 raṭls of Qily, it would almost appear that 'Qily' here means the dried soda plant, and not the ashes left after its combustion.

4 This is the naturally occurring volcanic product and is probably, therefore, ammonium chloride; cf. Ibnu-l-Baiṭār, *trans. cit.*, III, p. 380; Stapleton, *Memoirs A.S.B.*, I., p. 29, text, and note (5).

5 Mentioned in the *Qānūn* as a green variety, stronger in its medicinal action than Cyprian Zāj.

6 Tinkār, Red Armenian Borax, and Naṭrūn were different varieties of the بورق 'Būraq' (borax) of the Arabs (*Mafātīḥ.*, *ed. cit.*, p. 260; Ibnu-l-Baiṭār, *trans. cit.*, I, pp. 289 and 289). This term certainly included other fusible substances besides our Borax since Naṭrūn is sodium sesquicarbonate. The *Qānūn* states that the Armenian was the best variety. It occurred naturally in soft, spongy flakes, of a white, reddish, or purplish colour.

equally, without increasing one, or diminishing another ; lest the work should be spoilt, and your object be not attained. If you increase the weight of one substance you should add to the others proportionately. By observing this rule, you will—if it please God !—attain your object and reach the extreme limit of your desires."

Chapter IV.

In this chapter, the substances mentioned in the previous chapter are divided into two classes according as they are suitable for making 'the White,' or 'the Red.' Weights of the substances—here referred to collectively as 'Stones' (*Aḥjār*)[1]—are stated as before in raṭls, ounces, dirhams, and qīrāṭs, but for purposes of tabulation, only the number of dirhams of each need be quoted.[2]

Substances employed.	(*a*) For 'the White.'	(*b*) For 'the Red.'
Pure Gold	...	5[3]
Filings of Silver	4[3]	...
Red Copper of Khurāsān	...	$53\frac{1}{3}$
Filings of Copper of Mosul ...	1	...
Rūsakhtaj of Baṣrah	$10\frac{2}{3}$	...
Zinjār of Ḥimṣ	...	32
Filings of Female Iron	$74\frac{2}{3}$	...
Filings of Steel—*i.e.*, Male Iron ...	...	$21\frac{1}{3}$
Tin (*Raṣāṣ Qal'ī*)	10	...
Mercury	$90\frac{2}{3}$	$26\frac{2}{3}$
Yellow Sulphur	7	$202\frac{2}{3}$[4]
Yellow Arsenic Sulphide [----] in flakes	256	$42\frac{2}{3}$
Salt of Qily	...	"48 dirhams.[5] This is made out of 1280 dirhams of Qily."
Lime—unslaked	...	32
Sal-Ammoniac of Khurāsān ...	22	$5\frac{1}{3}$
Salt of Dough	256	...
Egyptian Zāj	...	$53\frac{1}{3}$
'Qalqant'	...	32
'Iqlīmia,' or 'Yellow Mārqathīthā' ...	...	$106\frac{2}{3}$
Female Maghnīsiyā—black, soft, and of a yielding texture	6	...

[1] The word is employed in the same sense that it possesses in the *Mafātīḥu-l-'Ulūm*—"anything by which the Art can be performed, that is, anything out of which Elixir can be made" (*ed. cit.*, p. 265)—and not in the more limited meaning of Chap. I.

[2] A similar statement is found in the contemporary Syrio-Arabic treatise of the British Museum (Berthelot, *La Chimie*, II, pp. 164 and 165), but the lists there given are too confused for any useful comparison to be made with them.

[3] The fact that this table calls for the use of a small quantity of gold in producing gold, and a similar quantity of silver in making silver, is probably to be explained on the principle of 'like producing like.'

[4] Corrected. MS. تسع عشرة اوقية وهي مائة وستة وتسعون درهماً '19 oz = 196 dirhams.'

[5] Corrected. MS. اربع اواق ونصف وهي ثمانية واربعون درهماً واربعة دوانق '4½ oz = 48⅔ dirhams.'

COMPARATIVE TABLE.—*Contd.*

Substances employed.	(*a*) For 'the White.'	(*b*) For 'the Red.'
Alum of Yemen	$80\frac{1}{3}$	...
Tinkār	...	$5\frac{1}{3}$
Martak	...	$10\frac{2}{3}$
The stone Maghnātīs	...	$1\frac{1}{3}$
Armenian Borax	$21\frac{1}{3}$	...
Naṭrūn	...	$8\frac{1}{3}$
Hens' Eggs	...	50[1]
TOTAL	$839\frac{2}{3}$	$1918\frac{2}{3}$[2]

CHAPTER V.

The fifth chapter, if complete, would probably have been found to contain a full description of the instruments used in Alchemy. The MS., however, is corrupt, and after giving a list of the instruments necessary for making 'the White,' it breaks off at the beginning of the corresponding list of instruments for 'the Red' into an account of two alchemical processes, called respectively the 'Second Pillar' and the 'Third Pillar.' It is impossible to say whether these sections belong to Chapter V, or, as is perhaps more likely, to Chapter VII, since the MS. ends before even the 'Third Pillar' has been fully described.

We quote the list of the instruments, so far as it goes, as well as an incomplete account of a home-made '*Uṯhāl*' (Aludel) that occurs in the 'Third Pillar.'

> "An Account of the Instruments, giving details of those that should be either purchased or made for the manufacture of 'the White.'"
>
> "Muḥammad ibn Abdi-l-Malik al-Kāṯhī saith: Among them are:—
>
> (1) A File (*Miḥraa*) for filing silver, copper, and iron.
>
> (2) Two glass Cups (*Qadaḥ*) without spouts, for the volatilisation[3] of silver.
>
> (3) A stone '*Ṣalāyah*' and a '*Fihr*'[4] for pounding medicines.

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[1] The Syrio-Arabic treatise also mentions the employment of yolks of eggs in its chapter on the manufacture of gold (*loc. cit.*, p. 179).

[2] Corrected. MS., الف وتسعمائة وثلثلة وخمسون درهماً واربعة دوانق, 1953¾ dirhams. The corrected total includes the weight of Qily, but not its salt. The eggs are also excluded.

[3] As the word *Taṣ'īd* is generally used for solids and not liquids (*Mafātīḥ.*, p. 264) the sublimation of some compound of silver from a mixture of silver filings and various salts, is probably here meant, and not the actual distillation of silver itself.

[4] Cf. the list of instruments given in the Syrio-Arabic treatise (*loc. cit.*, p. 150). The *Ṣalāyah* and *Fihr* are the modern *Sil* (سل) and *Lorha* (لوڑھا), the oblong flat stone, and roller, used in India for making curry powder. The dimensions of the alchemical *ṣalāyoh* are stated in the same treatise (*loc. cit.*, p. 167) to be 1 cubit long by 3 cubits broad, *i.e.* about three times the size of the common form. The Syrio-Arabic author also states that the *Fihr* should be made of jet-black stone.

(4) Five large earthenware Jars (*Barānī*), glazed inside, and provided with lids, for heating purposes.

(5) Three earthenware Pots (*Qudūr*) glazed inside, for the long *Uṯhāl* that is used in volatilising[1] Tin and other things, together with three Covers (*Mikabbāt*) of unglazed earthenware for covering the *Uṯhāl*.

(6) (*a*) A piece of coarsely-woven Hair Cloth,[2] used in the process of *Ḥall*[3] for Tin and other things. This process occupies 40 days.

(*b*) A glass Funnel (*Qim'*)[4], over which the hair-cloth is stretched, for the reception of whatever has to be dissolved.

(*c*) A large glass Bottle (*Qinnīnah*), in the mouth of which the funnel is placed, so that the dissolved substance drops into the bottle.

(*d*) A felt covered Basket (*Sallah*) or Cage (*Qafaṣ*) inverted over the bottle to preserve the medicine from injury when in the dung.

(7) A stone Mortar (*Hāwan*) for pounding sulphur and similar substances.

(8) A large Cup for washing mercury.

(9) (*a*) A large Crucible (*Būṭaqah*).

(*b*) A Furnace (*Kūr*).

(*c*) Bellows (*Minfāḵh*).

(*d*) A pair of Pincers (*Kalbatān*).

(*e*) A '*Māshak*' (Ladle).[5]

All these are for use in the fusing together of Mercury and Arsenic Sulphide.

(10) A Cauldron (*Mirjal*), or Pot (*Ṭinjīr*), in which to dissolve alum.

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[1] See *antea*, p. 60, note (3).

[2] Lit. "a piece of hair sieve."

[3] A convenient translation of the important word *Ḥall* (lit. 'loosening') is 'Dissolution.' It is defined in the *Mafātīḥu-l-'Ulūm* (*ed. cit.*, p. 264) as the reducing of solid substances to the state of water, and a good idea of one method of performing it may be obtained from the following translation of the article on *Ḥall* that is given in the Syrio-Arabic treatise (*loc. cit.*, Text, p. 81).

"DISSOLUTION.—Take the substance after it has undergone the process of 'Ceration' (cf. Stapleton, *Memoirs A.S.B.*, I, p. 39, text, and note (2), and having pounded it finely, place it in a hair sieve that is not fitted with a hoop. You must then join the sides of the sieve and tie them together with a very strong string made of hair. Next, you take a pot, and having pierced a hole in the bottom large enough for the string to enter, you hang the thread from it. The pot should be inverted on its face and under it is placed a cup of '*ghaḍhār*,' large and wide. The sieve should be suspended by the string in the middle of the pot, and the pot placed over the cup in such a way as to cover it.

"Then without disturbing the apparatus, you bury it in a large quantity of moist dung. Change the dung every 10 days. The substance will gradually dissolve and fall from the sieve in drops of red water. Take it and put it on one side. Dissolution requires 42 days or more. If you heat a dirham, and let fall on to it a single drop of this water, it will colour both its exterior and interior." For a hypothetical reconstruction of this apparatus, see Plate I, Fig. 4.

In the process described in the text, and figured hypothetically in Plate I, Fig. 5, the bottle—after the funnel containing the hair cloth and substance has been placed in position—is covered with a felt-covered basket (*Qafaṣ*), which is then packed round with dung. In the course of 40 days the substance deliquesces by the absorption of the vapours given off from the dung and the resultant liquid collects in the bottle.

[4] The well-known dictionary *Lisānu-l-'Arab* (written in the 13th cent. but based upon works of the 10th cent.) has the following note on the *Qim'*. "It is that which is placed in the mouth of water, wine, and milk skins when they are being filled. Its name is derived from قمع *qam'*, to enter, because it enters into the mouth of the vessel." (Būlāq ed.).

[5] *Māshak* is taken to be the Arabicised form of the Persian ماشو *māshū*, a ladle. If this is correct, the list of instruments for fusing that is given in the *'Ainu-ṣ-Ṣan'ah* becomes identical with that given on p. 256 of the *Mafātīḥu-l-'Ulūm*.

(11) Phials (*Qawārīr*) for the process of '*Takhnīq*,'[1] similar to those used for holding rose-water.

(12) A large Bottle for the dissolution of all the medicine, a process which occupies 33 days. The entire period of dissolution for the making of silver is therefore 73 days, besides the days on which the medicines are being prepared for dissolution. And God is the Giver of Success!

"An Account of the Instruments, either purchased or chosen (?), for the preparation of 'the Red.'"

"Muḥammad ibn 'Abdi-l-Malik saith: Among them are:—

(1) A *Ṣalāyah* and a *Fihr* for pounding Zinjār and other selected medicines.

(2) Two large earthenware Jars glazed inside, and provided with lids, for heating purposes."

* * * * * *

Description of the 'Uthāl' (Aludel), with its Furnace.

[The treatment of a mixture of various substances is being described.]

"Having pounded it (*i.e.*, the mixture), you take the three pots of the *Uthāl* which are of this shape, the length of each being a cubit,[2] the aperture one span, and the lips projecting about four finger-breadths. They are constructed by potters of '*ghaḍhār*,'[3] and are glazed on the inside.

Black
Red.

Fig. 6.

In addition, take three round-bottomed covers, also made of baked *ghaḍhār*, but unglazed. Their sides are pierced with a hole at 'four fingers' distance from the top, measuring towards the rim, the size of the hole being such that a stick of the thickness of a bodkin can enter, to extract the moisture and by means of which the progress of the sublimation may be studied. The diameter of the covers is exactly the same as that of the lips of the *uthāl*.

If these vessels cannot be procured, you take (*a*) a cup made of *ghaḍhār*, or a '*Sāghar*,'[4] and (*b*) a large green jar or a '*Bustūqah*,'[5] of the capacity of two 'dauraqs' of water, the weight of each dauraq being 1040 dirhams. You cut it (*i.e.*, whichever one of the latter you choose) into two halves with a saw and take the lower half for conversion into an *uthāl*.

The method of doing this is as follows. You prepare a large disc (*turs*) of the 'Clay of

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1 According to another treatise in the Rampur MS., the process of *Takhnīq* (lit. 'strangling') is a kind of sublimation. The substance under treatment is placed in a short-necked phial and heated gently until it has volatilised into the neck.

2 Lit. 'the arm bone.'

3 A special kind of greenish clay.

4 A large drinking cup (Persian).

5 An elongated jar for storing butter and other supplies (Persian). Taking a 'aṭl' as equal to 1 lb. of water, the capacity of the *bustūqah* here mentioned would be a little more than 1½ gallons.

Wisdom,'[1] of the breadth of two spans and the thickness of a thumb, and while it is still moist, you invert on its centre the lower half of the jar. By exerting a little pressure, you obtain the measure of the circumference and its mark is impressed. After removing the jar, you take the cup of *ghaḍhār*, and invert it on the disc, pressing it down so that it may also leave its mark.[2] This in turn is removed, and the layer left in the shade to dry. When it is well dried, you take it and having cut out the centre with a knife up to the limit of the mark of the jar, you mount it (*i.e.*, the ring of clay that remains) on the top (?) of the lower half of the jar, just like the lips of the pots made of *ghaḍhār*. The joint is luted with clay, and when this is dry, the instrument resembles in shape the ordinary *uthāl*. It is then taken and half covered with 'clay of wisdom' to the thickness of a thumb. You also affix, half-way up, four handles of clay so that it may rest on the '*Mustauqad*' (furnace). Finally the clay is allowed to dry.[3]

You next build for this *uthāl*, a round *mustauqad*, similar in appearance to the *mustauqad* of the sweetmeat sellers, having a small door for the fuel and two openings on the right and left, at the height of a '*shakankah*'[4] from the ground for the smoke to go out of. The height of the top of the *mustauqad* from the ground is two spans and the breadth of the aperture three spans.

The *uthāl* is mounted on the *mustauqad* according to the annexed figure. Between its sides and those of the *mustauqad* there is a space of four fingers[5] for the tongue of the flame to play in, and between the bottom of the pot and the ground a distance of a span. You must also make certain of the junction between *uthāl* and *mustauqad* by covering in with clay all round.[6]

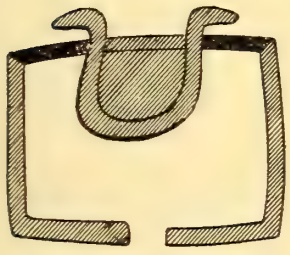

Fig. 7.

When the *uthāl* is properly fixed in position, you take a little '*Isfīdāju-l-Jusṣ*' (shell lime) and having pounded it up with water, you smear it on the surface of the lip and leave

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1 Earlier in the 'Third Pillar' of the '*Ainu-ṣ-Ṣan'ah*, it is mentioned that the special luting clay ('Clay of Wisdom,') employed by Muḥammad ibn 'Abdi-l-Malik, consisted of two-thirds *Ṭīnu-l-Ḥurr* (clay, free from stones; see Ibnu-l-Baiṭār, *trans. cit.*, II, p. 424) and one-third of a mixture of dried dung and chopped animals' hair. From Bar Bahlūl, *loc. cit.*, p. 137, it would seem probable that the stone-free clay used in making 'clay of wisdom' came from Assuan in Upper Egypt.

2 As is evident from what follows, the rim of the cup is of larger diameter than that of the jar.

3 With this compare the following extract from the contemporary Syrio-Arabic alchemical MS. published by Duval in Vol. II. of Berthelot's *La Chimie au Moyen Âge*, p. 69.

"Take a pot shaped like a '*Burmah*,' of the length of one cubit, and breadth two hands, and invert it on a level surface. After throwing sifted ashes round it for the space of a hand and a half, you remove the pot, and cover the ashes with clay up to the same limit. When the ring of clay is dry, lift it up and polish its surface with '*Isfīdāj*' and white of egg. Polish it a second time.

[Here comes an unintelligible sentence. The copyist also seems to have omitted a sentence describing the fixing of the ring on the top of the pot.]

"Then invert the pot of the *uthāl* on its face and after covering it evenly with clay all round, encircle the pot with wings, one hand below the shelf (*turs*, lit. 'disc'), in order that the flame of the fire may not affect whatever settles on the shelf, and so burn and damage it. Finally invert the cover on the *uthāl*. There is a mystery in this which we shall mention when giving an account of sublimates."

4 This measure of length does not seem to be mentioned in any Persian or Arabic dictionary

5 The home-made *uthāl* is apparently broader than the ready-made *uthāl* mentioned at the beginning of this section, as in the case of the latter, the distance between the sides of the *uthāl* and *mustauqad* would be one span. Little reliance can be placed on the drawing, for according to the description, only half the length of the *uthāl* should be within the *mustauqad*.

6 Cf. the Syrio-Arabic MS., *loc. cit.*, Text, p. 79:

it. Over this you sprinkle a little salt water, and then gently polish the surface with a polisher made of glass, in such a way that nothing is broken. After these preliminaries, two raṭls of the medicines that you wish to sublime—and no more—are placed inside, for if you introduce a large amount, it will refuse to volatilise. You next take the cup of *ghaḍhār*, and having pierced a hole in its side, large enough for a stick of the size of a bodkin to enter, at three fingers' distance from its rim, measuring towards the top, you invert the cup on the mark that is on the lip of the *uthāl*, according to the annexed figure. Then you take a little of the moistened *isfīdāj*, and pour it into the joint" . . . .

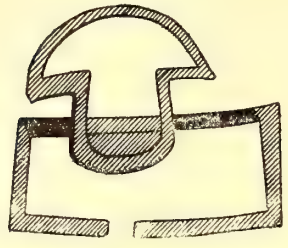

Fig. 8.

[At this point the MS. comes to an end.]

"Sublimation by means of the *Mustauqad*. Sublimation is carried on in a pot of earthenware, a pot of glass, or a pot of *ghaḍhār*.

These are the points to be observed :—

(*a*) The pot should be luted with 'clay of wisdom' besides being encircled with a collar of clay of the width of two fingers, so that it may stand firm on the *mustauqad*.

(*b*) The *mustauqad* should be round, with a door one span long by one span broad, and two apertures, one on each side, for smoke, and for air to enter.

(*c*) Between the bottom of the pot and the *Mustauqad* there should be a span's breadth, the collar of the pot being affixed at one-third of the distance from the top.

(*d*) If the pot is of glass, it should have a wide projecting lip of the breadth of four fingers. Its cover, which will close it completely (?), should also be of glass."

As there is little doubt that the Syrio-Arabic MS. is a volume of selections and not a single homogeneous treatise, the marked differences between the references to the *uthāl* contained in this extract and those given in the note on the previous page, is very probably due to their being drawn from different sources.

III. Arabic Text.

كتاب عين الصَّنْعة وعون الصَّنَعة الفه الشيخ الاديب محمد بن عبد الملك الصالحي الخوارزمي الكاثي[a] رحمة الله عليه *

بسم الله الرحمن الرحيم عونك يا لطيف

ان اولى ما بدئ به النطق وافضل ما زُيّن به الرق واحرى ما استقصيت به الطلبة واحق ما تلقيت به الموهبة حمدُ الله على نعمه السالفة والشكر له على مننه الآنفة والثناء على ما هو اهله ومستدعيه و مستأهله والصلوة على صفوته من انبيائه وخيرته من اصفيائه محمد صلى الله عليه وآله وسلم تسليما دائما كثيرا قال الشيخ الامام الاديب محمد بن عبد الملك الكاثي الخ *

[3 *pages (of* 19 *lines to the page) and* 7 *lines omitted.*]

ولو انهم سلكوا مسالكه وملكوا ممالكه وعرفوا حقائقه لما عابوه ولما استنقصوا عقول اربابه وذويه فصنفت كتابي بمدينة السلام في سنة ست وعشرين واربعمائة وجعلته سبعة ابواب بلا تطويل ولا اسهاب فاول الابواب في اسماء العقاقير واعدادها والتنبيه على ارواحها واجسادها وثانيها في طبائعها وما يختص به كل واحد منها وثالثها في تحـــزيزها[b] وتقديرها وتجزئتها وتدبيرها ورابعها في افراد ما يصلح منها للبيـــاض عما يصلح منها للحمرة وخامسها في ذكر آلاتها وشرح ما يحتاج اليه من ادواتها وسادسها في استبدال بعضها من بعض لقلة وجودها في ارض دون ارض وسابعها في تركيب بابين ليرغب متاملّوا الفائدة في تقنيتها مع نتف من الاعمال الهينة في كل من الفنون المستحسنة اضفها آخره ليكون كاملا في صفته وسميته عين الصنعة وعون الصنعة واودعته ما صح عندي مما جربته يدي وشقي في مقاساته بدني واشتغلت ايام زمني محتسبا للثواب الجزيل وملتمسا للثناء الجميل وانتهازا لوفاق من انا لاحسانه شاكر ولمحاسنه في المحافل ناشر حتى كأنّ كل عضو من اعضائي لسان بشكره ناطق وكل نفس من انفاسي ببيان ثنائه صادق

a) MS. الكاني b) MS. تحزيرها

* شعر *

انادي بالثنـــاء بكـــل ناد واعلنـــه كاعـــلان الاذان
وانظم من محاسنه عقـــودا فاجعلهـــا قـــلائد للـــزمان

هو الرئيس ابو الحسن علي [بن] عبـــد الله اطال الله عزيز بقائه وكبت شانئيه [a] ولاجرم ان الحكمـــاء المصنفين والعلماء المؤلفين كاندريا الحكيم وموسى بن عمران الكليم وخالد بن يزيد بن معاوية وابي زيد البلخي ومعمر الجرجاني والقاضي ابي عمر [b] الخوارزمي اصحاب هذه المقالة وما تضمنته من الشروح والاطالة وغيرهم من المتقدمين من جميع الصناعيين [c] [؟] اتعبوا مطايا العقول في اخراج الملتبس في المعقول لينتفع بتصانيفهم ويرتفق بتآليفهم من لو خلي وسوم عقله ووكل الى تمييزه وتحصيله لما وقف على وتح طفيف من هذا العلم الشريف *

[29 *lines omitted.*]

باب اسماء العقـــاقير واعدادها والتنبيـــه على ارواحها واجسادها * قال ابو الحكيـــم محمـــد بن عبد الملك الصالحي الخوارزمي *

* شعر *

يقولون لي انّى استتبّت [لك] [d] الحكم وانت فمـــن قوم اذا استنطقـــوا نعم
وقولي لهم ني خدمت اولي النهى ومن خدم السادات لم يعـــدم النعـــم
فان كان في خوارزم قومي ومولدي [e] فاني عراقـــي الطـــرائق والشيـــم
ولي همة لا ترتضي النقص في الذي به ترتضـــي في عصرنا سائر الهمـــم
ولو نال خلـــق بالفضـــائل رتبة لنلت [f] اعاليهـــا بهـــا دون ذي الامم

فاعلموا اعزكم الله ان من اسماء هذه العقاقير الجواهر السبعة وهي الذهب والفضة والنحاس والحديد والرصاصين والزئبق ومنها الاحجار الاثنا [g] عشر الكبريت والزرنيخ والقلي والنورة والنوشادر والملح والزاج والمـــرقشيثا والمغنيسيا [والشب والبورق [h]] والمرتك وهذه اصول الصنعة وهي ثمنية عشر حجرا ومن النـــاس من يجعل فيها الدهنج واللازورد والشادنج والتوتيا والاسرنج [j] والمسقط منها القلي والنورة والملح والزاج

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a) MS. وكتب مثاربه b) MS. inserts و between عمر and الخوارزمي c) MS. الصغويين
d) The addition is necessary for purpose of scansion. e) MS. ومولودي f) M.S. لثلث g) M.S. الاثنى
h) The copyist has omitted two out of the total of twelve, but judging from the list given in Chapter III. these appear to be the missing substances. i) MS. الاصول j) MS. والاسرب

والشب وهي ثلثة اجناس ارواح ونفس واجساد فالارواح الزئبق والنوشادر وما شاكلهما [a] والانفس الكبريت والزرنيخ وما اشبههما [b] والاجساد الذهب والفضة والحديد والمغنيسيا وما جانسها فمن اراد ان يخلط اكسيرا من الاكاسير فينبغي ان يجعل من الروح واحدا ومن النفس اثنين ومن الجسد واحدا مثال ذلك ان تاخذ من الزئبق درهما ومن الكبريت المبيض او الزرنيخ درهمين ومن الحديد درهما فيحصل الجسد ربع الاجزاء كلها بعد ان يحل الجسد حلا شافيا وكل اكسير لا يكون فيه الروح التي هي الزئبق والنفس التي هي الكبريت او الزرنيخ ثم جسد محلول او مجمد فليس بشي وقد يصبغ الروح والنفس بلا جسد الا ان صبغهما ينسلخ في السبك واذا اجتمعت الثلثة لم ينسلخ الصبغ واقوى الاجساد واصبرها على النار المغنيسيا اذا صار ماء رائقا وهي الزئبق [و] اذا كانت بينهـــا نفس طاهرة عملت بها الرووس الكبار ونلت همتك وبلغت مرادك وكنت سيدا *

خذ الفرار ان شئت * والا فارض بالرق وصعد ذاك [c] بالزاج * وحلل جسد الطلق
فان امت احياك * فانت صاحب الحق وان احييت موتاك * فانت سيد الخلق

والاصل التفريق ما بين الروح والنفس ثم تمويت النفس ثم رد الروح عليها حتى تحيـــا وتصير روحانية وتدخل في كل جسد فمن لم يفعل هكذا لم يظفر بطائل قال الحكيم

خذوا البدن المنقى فرضضوه * وردوه الى لون بهيم بحر النار مجتهدين حتى * يعود كميّت بال رميم
وذلك لا يكون بغير نار * وتجربة من الفهم الحكيم الم تر انما لاب وام * ولون في نضارته وسيم
ولكن الهوا والشمس لما * الحا بالحرارة والســـموم تغير بعضنا فاسود حتى * كان سواده حمم الجحيم
كذلكم [d] [؟] الذي احرقتموه * فسقّوه من الصافي الكريم فان الميت يحيا ثم [d] ... العود في الزهر العميم
فعنـــد حياته سقوه ماءً * من الماء المهيّا بالسموم وتعطوه نحاسا ثم مسا * منقى ليس بالدنس الذميم
والقوا نصف وزنهما نحاسا * خالصا غير مدخل [e] لئيم والقوا خمس وزنهما جميعا * من البدن المراجع للنعيم

والكبريت او [f] الزئبق والزرنيخ الركنان العظيمان في الصنعة والركنان الباقيان النوشادر والفضة او الرصاص او الذهب او النحاس فاعرفوا ذلك واعملوا عليه ترشدوا *

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a) MS. ما شكلها b) MS. شبهها c) MS. ذلك d) MS. worm-eaten.
e) This line is faulty. f) MS. و

[*Chapter* II, 48½ *lines omitted.*]

باب ثالث في التحزيز والتدبير والتجزئة والتقدير * قال محمـــد بن عبد الملك الكاتبي ان اقل ما يجب ان تاخذوا من هذه العقاقير حتى تجربوا منها ما شرحت في البابين من التدابير ذهب خالص ثلثة مثاقيل ونصف وهي خمسة دراهم ، وفضة خالصة اربعة دراهم ، ونحاس احمر خراساني خمس اواق وهي ثلثة وخمسون درهما ودانقان ، ونحاس موصلـــي درهم ، وروسختج [بصري [a] اوقية] وهي عشرة دراهم واربعة دوانق ، وزنجار حمصي ثلث اواق وهي اثنان وثلثون درهما ، وحديد نرماهن وهي الانثى سبع اواق وهي اربع وسبعون درهما واربعة دوانق ، وحديد فولاد وهو ذكر اوقيتان وهما [b] احد وعشرون درهما ودانقان ، و رصاص قلعي عشرة دراهم ، وزئبق احدى عشرة اوقية وهي مائة وسبعة عشر درهما [ودانقان [c]] ، وكبريت اصفر عراقي وتسع عشرة اوقية وسبعة دراهم وهي مائتان وتسعة دراهم واربعة دوانق ، [d] وزرنيخ اصفر افشيزق رطلان وثلث وهي مائتان [وثمانية [c]] وتسعـــون درهما واربعة دوانق ، وقلي عشرة ارطال لاربعة اواق ونصف ملح يعمل منه وهي الف ومائتان وثمانون درهما ، ونورة ثلث اواق وهي [اثنان و [c]] ثلثون درهما ، ونوشادر خراساني اوقيتان [e] [وستة دراهم [f]] وهي سبعـــة وعشرون درهما ودانقان ، وملح طيب رطلان [g] وهما مائتان وستة وخمسون درهما ، وزاج مصري خمس اواق وهي ثلثة وخمسون درهما ودانقان ، وقلقند ثلث اواق وهي اثنان وثلثون درهما ، واقليميا الذهب او مرقشيثا عشر اواق وهي مائة درهم وستة دراهم واربعة دوانق ، [h] ومغنيسيا انثى سوداء هشة رخوة ستة دراهم ، وشب يماني سبع اواق ونصف وهي ثمانون درهما ودانقان ، [i] وتنكار نصف اوقية وهي خمسة دراهم ودانقان ، ومرتك اوقية وهي عشرة دراهم واربعة دوانق ، وحجر مغناطيس ستة عشر قيراطا وهي درهم ودانقان ، وبورق ارمني احمر اوقيتيان [j] وهما احد وعشرون درهما ودانقان ، وظرون ثمنية دراهم ودانقان ، وبيض دجاج خمسون [k] بيضة فذلك الجميع الفان وسبع مائة وثمانية وخمسون درهما ودانقان [l] وان احتجتم الى اكثر من هذه الادوية [m] فاضعفوا هذه الاوزان بالسوية ولا تزيدوا في حجر وتنقصوا من الاخر كي لا يفسد عليكم العمل و يفوتكم الاصل بل اذا زدتم في حجر زدتم بحساب ذلك من الاخر فاحفظوا القانون تظفروا بمرادكم وتبلغوا اقصى امانيكم وبغيتكم ان شاء الله تعالى *

---

a) MS. worm-eaten : reading supplied from Chap. IV. *b*) MS. وارقيتين وهو *c*) Corrected from Chap. IV.
d) MS. وهي مائتان وثلث دراهم *e*) MS. اوقيتين *f*) MS. و نصف corrected by calculation from Chap IV.
g) MS. رطلين *h*) MS. مائة وثلث وخمسون درهما ودانقان : corrected by calculation.
i) The word دانقان should be omitted, but no change is made as the readings of Chaps. III. and IV. are identical.
j) MS. اوقتين *k*) MS. خمسين *l*) MS. وثلثة وخمسون درهما واربع دوانق *m*) MS. الدواء

[*Chapter* IV, 29 *lines omitted.*]

الباب الخامس في ذكر الالات وشرح ما [a] يحتاج اليه في البياض (والحمرة) [b] للشربي والاعتراض * قال محمد بن عبد الملك الكاتبي من ذلك مبرد لسحل [c] الفضة والنحاس والحديد وقدحان [d] من زجاج بلا بولين لتصعيد الفضة وصلاية حجر وفهر لسحق الادوية وخمس براني خزف مدهونة الدواخل باغطيتها للتشوية وثلثة قدور اثال طويلة [e] من خزف مدهونة الدواخل لتصعيد الرصاص وغيره وثلث مكبات خزف غير مدهونة لتغطية الاثال وقطعة منخل شعر لحل الرصاص وغيره وهو في اربعين يوما وقمع زجاج لفرش المنخل فيه ووضع ما يراد حله فوقه وقنينة كبيرة زجاج لتركيب القمع على فمها لينزل الدواء فيها وسلة ملبدة او قفص لتكب على القنينة لينحفظ في الزبل وهاون حجر لدق الكبريت وامثاله وقدح كبير لغسل الزئبق وبوطقة كبيرة وكور ومنفاخ وكلبتان [f] وماشك لاذابة الزئبق والزرنيخ ومرجل او طنجير لحل الشب وقوارير كالماورديات للتخنيق [g] وقنينة كبيرة لحل الدواء كله وهو في ثلثة وثلثين يوما يكون جميع مدد الحل في باب الفضة ثلثة وسبعين [h] يوما سوى الايام التي تحصل فيها الادوية وتستعد للحل وبالله التوفيق * ذكر الآلات وما يحتاج اليه [i] في باب الحمرة للشربي والخبرة * قال محمد بن عبد الملك من ذلك صلاية وفهر لسحق الزنجار والادوية المجموعة وبرنيتان كبيرتان [j] من خزف بغطائيهما [k] مدهونتا [l] الدواخل للتشوية [m] وهذا باب تدبير الركن الثاني الخ

[42 *lines omitted.*]

ثم تسحقوها وتاخذوا لها ثلث قدور الاثال وهي على هذه الصورة طول كل واحد منها عظم ذراع

Black
Red.

Fig. 9.

وفتحته شبر وشفته مقلوبة الى وراء بمقدار اربع اصابع مضمومة وهي من طين الغضاريين ومن عملهم مدهونة الدواخل وثلث مكبات خزف وهي غضار بلا كعاب محرقة غير مدهونة مثقوبة الجوانب من مواضع كعابها الى شفاهها باربع اصابع مضمومة ثقبا يدخله عود بغلظ المسلة لاستخراج الرطوبة منها واستعلام التصعيد بها وسعة شفاهها [n] على قدر سعة شفاه الاثال وان تعذرت فتاخذوا جاما من غضار

---

a) MS. اليها
b) This should probably be omitted, as the first list only comprises the instruments used in the preparation of silver.
c) MS. لمستحل
d) MS. وقد حين
e) MS. طويل
f) MS. وكلبتين
g) MS. للتحيق
h) MS. وسبعون
i) MS. اليها
j) MS. وبرنيتين كبيرتين
k) MS. باغطيتها
l) MS. مدهونة
m) Lacuna (?).
n) MS. شفاتها

و صاغرا وجرّة خضراء كبيرة او بستوقة تسع دورقين من الماء وزن الدورق الف واربعون درهما فتقطعوها نصفين بالمنشار وتاخذوا نصفها السفلاني حتى تجعلوا اثالا وتعملوا ترسا واسعا من طين الحكمة عرضه شبران وغلظه كعقد الابهام وتكبوا هذا النصف السفلاني من الجرة على وسط هذا الترس الرطب وتغمزوه فيه قليلا لتاخذوا مقدار سعته و يرتسم موضعه ثم ترفعوه ناحية وتاخذوا الجام الغضار وتكبوه على الترس ايضا وتغمزوه فيه لينحزّ موضعه ثم ترفعوه ناحية وتتركوا الترس في الفيء حتى يجف جفافا جيدا ثم تاخذوه وتقوّروا وسطه بالسكين الى حد علامة الجرة وتركبوه على فم [a] ذلك النصف السفلاني من الجرة وتاخذوا الوصل بينهما بالطين وتدعوه يجف عليه شبيها بشغاه الغضار [b] ويصير في صورة الاثال المستعمل ثم تاخذوه وتطينوا نصفه بطين الحكمة بعقد الابهام وتجعلوا له في حد النصف اربع ملازم من طين لقعوده على المستوقد وتجففوه ثم تبنوا له مستوقدا مدورا على عمل مستوقد الحلاويين له باب لطيف للوقود وكوة من يمينه وكوة من يساره على علو شكنكة من الارض للدخان وعلوه [c] من الارض شبران وفتحته ثلثة اشبار وتنصبوه على المستوقد على هذه الصورة

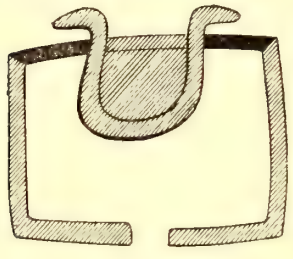

Fig. 10.

ويكون بين جوانبه وجوانب المستوقد من الفضاء مقدار اربع اصابع مضمومة للسان النار وبين اسفل القدر والارض فضاء بمقدار شبر وتستوثقوا من الوصل بينه وبين المستوقد بالتطيين حواليه وتاخذوا قليلا من اسفيداج الجص وتضربوه بالماء وتمسحوه على وجه شفته وتدعوه ثم ترشوا عليه [d] قليلا من ماء الملح وتصقلوه بمصقلة زجاج صقلا بالرفق حتى لاينكسر وتكبسوا فيه من الادوية التي يراد تصعيدها رطلين فحسب فالكثير يتنعر ولا يتصاعد ثم تاخذوا الجام الغضار وتثقبوا من جانبه في شفته الى الكعب بثلث اصابع ثقبا يدخله عود كالمسلة وتكبوه على الحزة التي في ترس الاثال على هذه الصورة

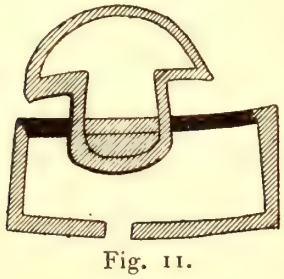

Fig. 11.

وتاخذوامن الاسفيداج المبلول قليلا وتصبوه حول الدرز . . . . . .

---

a) MS. قر b) MS. بشفات الغضاري c) MS. وعلو d) MS. عليها

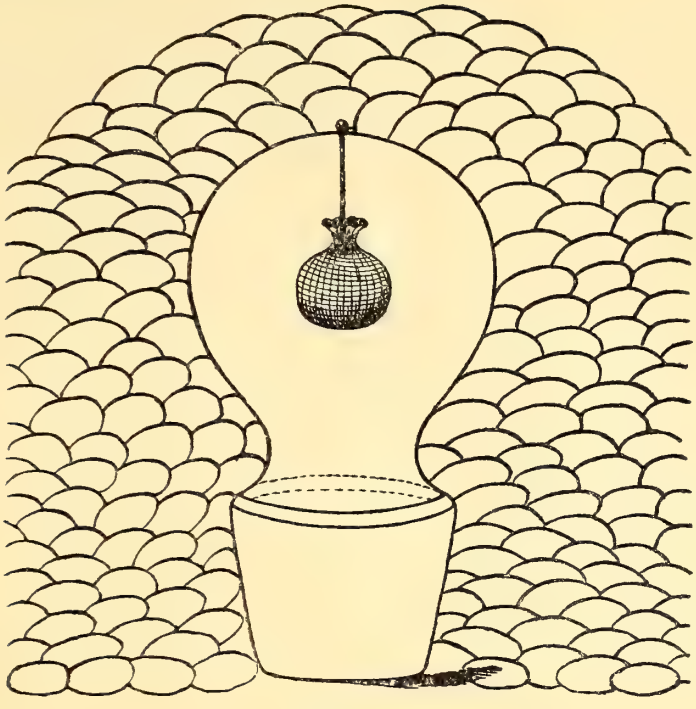

Fig. 4.

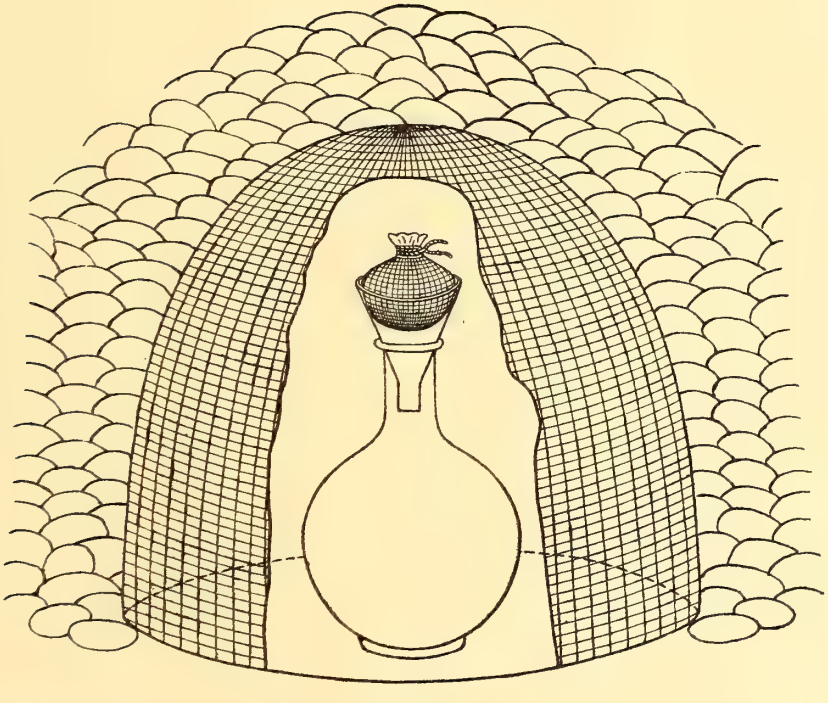

Fig. 5.

TWO METHODS OF CARRYING OUT THE PROCESS OF *HALL*.

[To face p. 61.]

Memoirs of the Asiatic Society of Bengal.

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MEMOIRS

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MALAYSIAN BARNACLES IN THE INDIAN MUSEUM, WITH A LIST OF THE INDIAN PEDUNCULATA

BY

N. ANNANDALE, B.A., D.Sc.,

Deputy Superintendent of the Indian Museum.

(WITH ONE PLATE.)

Smithsonian Institution,
OCT 12 1906
National Museum.

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Malaysian Barnacles in the Indian Museum, with a List of the Indian Pedunculata.

(With one plate.)

By N. Annandale, B.A., (Oxon), D.Sc. (Edin.), *Deputy Superintendent of the Indian Museum.*

[Read July 5th, 1905.]

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I.

Stalked Barnacles from Western Malaysia.

Of Stalked Barnacles already known from the western section of the Malay Archipelago, the Indian Museum possesses examples of the following, none of which have hitherto been included in the Indian[1] Marine Fauna :—

1. *Pœcilasma amygdalum*, C. W. Aurivillius, 1894.

One specimen from the Andamans. Previously known from Java.

2. *Dichelaspis equina*, Lanchester, 1902.

Numerous specimens on the limbs and carapace of *Doclea ovis* and other crabs from shallow water off the Ganjam Coast. They exhibit the same variety as regards the terga as that noted by the author of the species (*P.Z.S.* 1902 (2), p. 376), but the membrane is uniformly opaque.[2] Previously known from Trengganu, Malay Peninsula.

3. *Alepas indica*, Gruvel, 1901.

Several specimens on floating wood from the Nicobars. The only locality hitherto recorded is Singapore.

The specimens on which the new species described below are based were presented to the Indian Museum by Capt. F. Worsley and the Eastern Telegraph Company. As very few Barnacles have been reported from the same part of Malaysia, it is not surprising that they should be new. They are distinct from any dredged by the R.I.M.S. Ship

[1] It should be noted that Continental writers on Marine Zoology, use the term "Indian," or its equivalent in their own languages, with a wider significance than British and Indian naturalists usually adopt. Hœk's *Scalpellum indicum* comes from the Banda Sea, while Gruvel includes Singapore in *l'Inde Anglaise*.

[2] This is not the case with some specimens which I have lately examined in Ceylon. All our specimens in the Indian Museum are very small. Oct. 4th, 1905.

"Investigator," whose collection of Cirripedia Pedunculata I hope to describe shortly; but it is very possible that all of them exist in the Indian seas. Their localities and the names given them are as follows :—

1.	*Scalpellum inerme* ...	Bali Straits	: 160 fathoms.
2.	,, *sociabile* ...	,,	,, ,,
3.	*Alepas malaysiana* ...	Gaspar Straits	: 30 ,,
4.	,, *gigas* ...	Bali Straits	: 160 ,,

Of the four species, it will be seen that two belong to the genus *Scalpellum*, which occurs in all seas and has a range in depth from about twenty to at least two thousand fathoms. The other two represent the genus *Alepas*—a much smaller genus confined to warm and temperate regions and occurring both on the surface attached to floating objects and at considerable, but not, so far as is known, at great depths.

Scalpellum inerme is represented by a single female specimen, which was probably adult but did not happen to be breeding when captured. It appears to be the largest Stalked Barnacle as yet described, and cannot be confused with any other known species, the enormous development of the membranous part of the capitulum, the relatively small size but compact structure of the calcified plates of the same region, the regular and complete armature and considerable length of its peduncle, distinguishing it, combined with its bulk, from all other *Scalpella*. In the case of the type specimen, the whole of the capitulum and part of the stalk were concealed beneath an incrusting Alcyonarian ; but the connection between the two organisms was probably fortuitous, as the same Alcyonarian had also overgrown the valves of one of the largest specimens of *S. sociabile*, despite the hairiness of its membrane. (No degeneration of the calcified plates had taken place in the case of the latter specimen as a result of its occlusion.)

Of *S. sociabile* we have a large number of hermaphrodite individuals of different ages and belonging to two distinct assemblages, the larger of which was ultimately attached to the peduncle of *S. inerme*, the smaller to that of *Alepas gigas*. In each case the young of one individual or of its neighbours have settled upon its capitulum and peduncle, and have in their turn been similarly obsessed; so that what may almost be called a branching colony has arisen, though of course there is no organic connection between the individuals which compose it. The capitula of those individuals which are not covered with the Alcyonarian support a plentiful growth of a small Hydrozoon.

The affinities of *S. sociabile* would seem to be with *S. molucccanum*, Hœk, and *S. molle*, Aur. ; but without examining specimens of all the species in question it is difficult to pronounce a definite opinion on this point. In any case, the new form appears to be worthy of true specific rank.

Alepas gigas apparently reaches a larger size than any species of its genus hitherto described ; while the scattered hairs on the surface of its integument appear to be unique as far as *Alepas* is concerned. Unfortunately only one specimen was taken. It is probably adult, but bears no eggs. The opaque integument of this and the succeeding form is characteristic of species attached to the bottom, those which adhere to floating objects being frequently (as in the case of *A. indica*) quite transparent.

Of *A. malaysiana* two specimens were obtained—a very young individual and another, probably adult, to the peduncle of which the former was fastened. In some respects this species resembles *A. lankesteri*, Gruvel,[1] and its allies; but it is distinguished from them externally by the possession of a regular carinal crest and by other peculiarities.

Scalpellum inerme, sp. nov.

Description—

Capitulum laterally compressed, almost quadrilateral, formed of stout, rather brittle, feebly translucent, smooth membrane, to the inner surface of which 14 small, thick, white, opaque plates are attached, being invisible externally except for the upper part of the terga, carina and scuta and the free extremity of the carinal latus. The lines of growth are well marked upon them. *Carina* bent on itself at an angle and differentiated into a vertical and a horizontal limb, a prominent tooth which terminates in the umbo occurring at their point of junction. Dorsal surface of horizontal limb convex; lateral surfaces rounded, low; the former, as seen from above, expanding gradually from point of junction and somewhat dilated at the free extremity. Vertical limb flat on the dorsal surface except for a slight median ridge; no distinct borders; sides for the most part almost vertical, deeply concave near junction of two limbs; general form of limb, as seen from behind, a narrow isosceles triangle, but with a wedge-shaped base. *Scuta* also differentiated into two parts, the lower of which is subtriangular, with the lateral margin feebly convex, the basal margin slightly concave and the occludent margin almost straight; the upper or tergal part narrow, elongated, rectangular; these two parts united by a narrow, depressed strip running down occludent margin of each; umbo at junction of two parts; the lower part deeply concave internally in contact with the mantle. *Terga* ⋏-shaped, the scutal border very deeply excavated; umbo at apex, near upper margin of capitulum, widely separated from free extremity of carina. *Upper Latus* very small, widely separated from other plates, rhomboidal, with five facets on its external surface; umbo near centre. *Rostral Latus* leaf-shaped, pointed at occludent extremity, blunt towards inframedian latus, with a slightly curved ridge along its major axis. *Infra median Latus* small, subquadrangular, oblong; the major axis carino-scutal, with three facets on external surface and a narrow depressed slip inferior to them. *Carinal Latus* crescentic, protruding, with an additional flattened strip running along its middle third on the carinal margin. *Rostrum* saddle-shaped, astride occludent surface of the capitulum, with its apex penetrating the membrane nearly to the external surface; part of each limb internal to rostral latus.

Peduncle stout, cylindrical, flexed, of equal diameter throughout, about $1\frac{1}{3}$ times as long as capitulum, armed with 45 rings of regular, homogeneous, oval scales arranged in such a way that they overlap at the ends round the circle, and covered with a thick membrane plentifully set with short brownish hairs. (Possibly similar hairs would be found on the capitular membrane of an individual which had not been occluded by another organism).

---

[1] *Trans. Linn. Soc., Zool.* (2) VIII., p. 282.

Dimensions—

Length of Capitulum	...	... 60 mm.
Breadth of ,,	...	... 45 ,,
Thickness of ,,	...	... 16 ,,
Length of Peduncle	...	... 81 ,,
Diameter of ,,	...	... 24 ,,

Appendages, etc.—

First Cirrus widely separated from second ; its basal joint broad, much compressed dorso-ventrally ; the two rami highly differentiated ; anterior ramus broad and rather short, strongly lobed on its posterior, more feebly on its anterior margin ; the ventral surface of its anterior half convex and covered with short silky hairs, that of the posterior half concave and bare except for a marginal fringe of similar hairs. Both surfaces of posterior ramus convex, the anterior and posterior halves less differentiated, the whole of the ventral surface hairy ; dorsal surface fitting into concave posterior half of ventral surface of anterior ramus ; the whole ramus longer than the anterior by three joints, pointed at free extremity. *Second* to *Sixth Cirri* offering no peculiarity except that the setæ which fringe their anterior margin are extremely fine and rather short. *Anal Appendages* short and very slender, with nine joints and a terminal bunch of fine hairs, the tip of which reaches the centre of the third joint of the sixth cirrus. *Penis* absent.

Mouth-Parts—

Labrum prominent, strongly bullate, constricted at the base. *Mandibles* large, with 5 main teeth ; two smaller teeth between the outermost and the next large one ; the four innermost main teeth subequal, the outermost simple, triangular. *Maxillæ* with free edge concave towards outermost spine ; spines numerous, feebly differentiated, outermost spine and several near the centre largest.

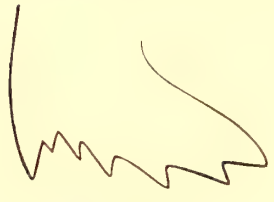


Fig. 1.—x10. *Scalpellum inerme*, mandible.

Observations—

The anus is unusually large in this species, being a vertical slit with swollen lips. The whole body is of a uniform yellowish tint and there is no trace of pigmentation at any point on the surface. These characters may be of importance in diagnosing some of the deep-sea forms.

S. inerme differs from any species of the genus previously described in having more than four main teeth on its mandible. Gruvel in his *Monographie des Cirrhipèdes*, (Paris, 1905), in defining the genus says, "*Mandibles avec trois ou quatre dents*," while Darwin wrote, "The mandibles have either three or four main teeth, generally with either one or two small teeth intermediate between the first and second large teeth," (*A Monograph of the Cirripedia, Lepadidæ*, p. 220, 1851). Considering the other peculiarities of the species, there

might be some grounds for regarding it as the representative of a new genus, but (leaving out of account the fact that it is only known from a single specimen which was probably living under abnormal conditions), its affinities lie so clearly with *Scalpellum* that I do not think this course would be justifiable. In the type both mandibles have been examined; their condition seems normal, as there is no variation between the left and the right.

Scalpellum sociabile, sp. nov.

Description—

Capitulum sub-triangular, with occludent edge of valves straight and vertical; 14 delicate, opaque, white, striated plates with lines of growth well marked on their external surface; plates entirely covered and partially concealed by a thin, tough, hairy membrane of a brownish shade, not very widely separated from one another, perfectly calcified. The hairs are short and rather coarse, most aboundant over the carina, the occludent margin of the terga and scuta and the base of the capitulum. *Carina* simply bowed in a moderate arc, its free extremity in contact with the terga but not between them; dorsal surface slightly concave, with borders feebly developed; lateral margins almost straight; umbo terminal. *Terga* large, triangular, with scutal margin sloping upwards from carinal to scutal margin, which is straight and vertical; carinal margin straight, forming an acute angle with occludent margin; umbo terminal, not retroverted. *Scuta* irregularly quadrilateral, subtriangular; occludent margin slightly convex outwards; basal margin practically straight, horizontal; lateral margin almost straight, meeting tergal margin, which is also almost straight, at an acute angle; umbo terminal, overlapping tergum slightly, feebly retroverted; a portion of the plate, forming a scalene triangle with the junction between the tergal and lateral margins as apex, depressed from without, the remainder being convex outwards and concave from within. *Median Latus* an irregular pentagon with the dorsal angle very acute, inclined towards the scutum; basal and carinal margins forming an obtuse angle. *Carinal Latus* horn-shaped, protuberant, with the free extremity turned upwards and slightly inwards; the bases of the two latera meeting behind the carina. *Inframedian Latus* small, subtriangular, with apex uppermost but reflected slightly above the upper margin of the carinal latus. *Carinal latus* long, narrow, with its lower margin slightly excavated and its upper margin correspondingly arched, blunt towards inframedian latus, sharply pointed over rostrum. *Rostrum* small, triangular, generally overlapped at least partially by the carinal latera, concealed beneath membrane.

Peduncle cylindrical, but often swollen irregularly in the middle; generally more or less contracted at the base; of varying length, with eight or nine alternating series of narrow, oval plates; about eight plates in each series, all covered with hairy membrane.

Dimensions—

Length of Capitulum	...	...	31 mm.
Breadth of ,,	...	...	20 ,,
Thickness of ,,	...	...	10 ,,

Appendages, etc.—

First Cirrus not very widely separated from second; the two rami not highly differentiated, both gradually diminishing towards tip and provided with a terminal bunch of hairs, neither deeply lobed at the edge, both flattened dorso-ventrally; anterior ramus slightly broader than posterior; posterior fitting into naked concave posterior half of anterior; the remainder of the ventral surface of both covered with short, silky hairs. *Anal Appendages* short, consisting of a broad, antero-posteriorly flattened proximal joint and four minute, more or less cylindrical distal joints; the outer margin of the former almost straight but with an excavation near the base, the margin directed towards the anus strongly convex, meeting the margin of its neighbour in the middle line; this joint longer than the sum of the others; the terminal joint not reaching the middle of the second joint of the sixth cirrus. *Penis* stout and long, covered with minute hairs, not distinctly annulated.

Fig. 2.—x10. *Scalpellum sociabile*, mandible.

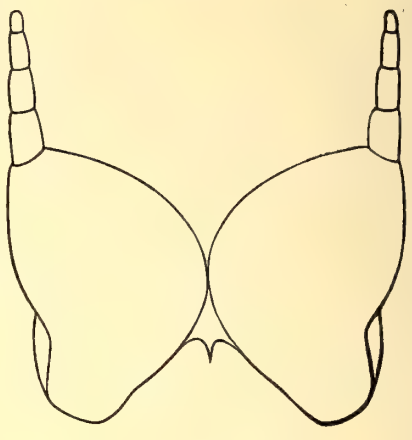


Fig. 3.—x30. *Scalpellum sociabile*, anal appendages from behind.

Mouth-Parts—

Labrum rather small, not very prominent. *Mandibles* with three teeth, the innermost long and simple, very blunt, the second and third widely separated, small. *Maxilla* with free surface concave towards inner bristle, slightly convex towards other extremity; bristles not highly differentiated.

Observations—

There are traces of pigment in this species in the form of minute, star-shaped cells on the surface of the mouth-parts and of blotches on the proximal joints of the cirri and a suffusion on the anal appendages. The pigment is of a purplish colour. The anal appendages are noteworthy. The mouth-parts are feebly developed.

I do not know of any other *Scalpellum* which is quite so gregarious as this species. In some other forms, e.g., *S. squamuliferum* (which is by far the most abundant in the deeper parts of the Bay of Bengal), numerous individual may be found attached to the same object (*e.g.*, to the glassy filaments of a *Hyalonema* or, more rarely, the shell of a *Xenophora*) and occasionally one individual grows up on the peduncle or capitulum of another; but the practice is not carried to the extent of young individuals using, generation after generation, their parents as a support. These instances add point to Hœk's suggestion as to the origin of dwarf or complemental males in the genera *Scalpellum* and *Ibla*:—

"In some of these species specimens attached themselves to each other as well as to other objects, and they developed all into ordinary hermaphrodite specimens. In one of these species, however, young specimens attached to full-grown older ones, though

developing into animals of the ordinary shape with a capitulum and a peduncle, did not acquire the size of the older specimens, and lost their female genital apparatus" (*Challenger Reports*, Vol. X, *Cirripedia* (2), p. 21).

In *S. squamuliferum*, in which the complemental males can only be found occasionally, young hermaphrodites and complemental males occur together on the edge of the opening and are difficult to distinguish from one another by the naked eye, the males having a well developed peduncle in spite of their minute size. In breeding specimens of *S. sociabile* no males were found; but the same thing has occurred with respect to several assemblages of *S. squamuliferum*, which were just as rich in individuals and some of the individuals of which were breeding. Possibly cross-fertilization is necessary or beneficial from time to time, but not invariably, just as fertilization only occurs at all either periodically or under certain conditions in many of the lower Crustacea. Even in those species of *Scalpellum* in which complemental males are believed to be always absent (e.g., *S. balanoides*, Hœk), it is quite probable that this may be the case, for very little can be known of the bionomics of the fauna of the oceanic abysses even under the most favourable conditions. A solitary specimen, or half a dozen specimens, in the way of which the dredge has chanced to come, may be the sole representative or representatives, as far as zoologists are concerned, of a species extremely common in its own place. Moreover, the few examples of such species in our museums can only be examined dead, and (even though the minute structures of the internal organs of specimens from great depths are often in an extraordinarily good state of preservation, whatever may have happened to their integument), it is by no means safe to argue similarity of function from similarity of structure in all cases.

Several of the individuals in the two assemblages of *S. sociabile* bear eggs. These are arranged in large, fan-shaped lamellæ on each side of the body. Each lamella is one layer deep but contains a considerable number (over 50) of ova. It is attached at its base to a well-defined club-shaped process of the sack or mantle. The eggs are minute, nearly globular, but with one axis very slightly longer than the other two, of a pale yellow colour. All of them, in different individuals, seem to have reached approximately the same stage of development, which is one of segmentation.

In connection with the formation of the assemblages it would be interesting to know how long the life of an individual lasts. There are many minute individuals among the specimens, but it seems improbable that a whole year should have elapsed between the birth of such small ones and the production of the eggs which were commencing to develop when the specimens were taken. It is known that some Barnacles[1] grow with great rapidity (see Darwin, *op. cit.*, p. 63). I have seen many flourishing assemblages of *Lepas fascicularis* attached to floating feathers off the coast of Iceland (Westman Straits), and it is obvious that such species as *Dichelaspis equina* and *D. pellucida* must perish whenever their host, be it crab or sea-snake, casts its skin. The enormous swarms of such Crustacea as *Calanus finmarchicus* in the seas of north-western Europe show that a high

[1] I have lately obtained a specimen of *Balanus tintinnabulum* (Linn.) from a buoy in the Pamben Channel which had only been in the water for about twelve months. The shell measures 65 mm. by 60 mm. Sept. 25th, 1905.

temperature is not necessary for luxuriant reproduction and growth in marine animals. I mention this fact because it must be remembered that the abysses even of tropical oceans are cold.

Alepas gigas, sp. nov.

Description—

Capitulum distinct from peduncle, subglobular, laterally compressed towards the edge of and above the opening, slightly turned up at the extremity of the carinal edge, with no definite crest, but with a slightly thickened carinal ridge which becomes obliterated on the peduncle; opening vertical, narrow, rather long, with feebly protuberant non-tubular lips. Integument thick, opaque, yellow, smooth for the most part, but with a few branching striæ and with straight wrinkles which tend to run at right angles to the major axis of the opening; short, stout hairs scattered singly on the surface. *Scuta* large, almond-shaped, feebly differentiated, meeting in the middle line below the opening.

Peduncle considerably longer than capitulum, with the diameter increasing gradually from above downwards, circular in cross section, profusely and regularly annulated, its hairs longer and slightly more numerous than those on the capitulum.

Dimensions—

Length of Capitulum	...	44 mm.
Breadth of ,,	...	29 ,,
Length of Peduncle	...	83 ,,
Diameter of ,, (centre)	...	21 ,,

Appendages, etc.—

First Cirrus with both joints long, slender, sub-cylindrical, separated from the 2nd cirrus by a considerable gap. Remaining cirri composed of a very large number of short joints, long and slender. *Fifth Cirrus* with posterior ramus moderately slender, composed of about 24 joints, not more than one-half as long and a third as thick as anterior ramus. *Sixth Cirrus* in much the same condition, with posterior ramus slightly stouter but not relatively longer, with the same number of joints. *Anal Appendages* swollen at the base, cylindrical, with 10 joints, the terminal bunch of hairs reaching slightly farther than the point of junction of the two rami of the sixth cirrus. *Penis* short, stout, closely ringed, not reaching as far forward as the mouth.

Mouth-Parts—

Labrum small, feebly protuberant, simple. *Mandibles* with 3 teeth; the innermost tooth dichotomous, the two branches having something of the appearance of a crab's chela; the two outer teeth simple, sub-equal; the body of the mandible partially clad with short spines, the tips of which do not reach the cutting edge; their pattern is shown in Fig. 3*b*, Pl. VIII. *Maxillæ* closely resembling those of *A. lankesteri*, Gruvel.

Observations—

The fact that three species of *Alepas*, out of the four represented in the Indian Museum collection, prove to be new, while the fourth has only recently been described, probably argues that the genus is considerably more prolific than was hitherto thought. So large a number of species have been diagnosed within the last few years that there can be little doubt that more will be discovered in the Oriental seas when further investigations are made.

ALEPAS MALAYSIANA, sp. nov.

Capitulum distinct from peduncle, laterally compressed, almost triangular, with occludent border convex outwards below opening, covered with a reticulation of fine striae, with deeper wrinkles running at right angles to the main axis of the opening ; no plates ; a distinct but low carinal crest. Opening large, oval, vertical, with tumid, fringed lips continous above but discontinous below. Integument opaque, dirty white.

Peduncle laterally compressed, irregularly annulated, almost as long as capitulum, of the same width throughout except at the base, where it expands into a flat disk.

Dimensions—

Length of Capitulum	...	... 9 mm.
Breadth of ,,	...	... 6.5 ,,
Thickness of ,,	...	... 3.5 ,,
Length of Peduncle	...	... 7 ,,

Appendages, etc.—

First Cirrus with both rami slender and very short, widely separated from second cirrus. Remaining cirri long and attenuated. Posterior ramus of *Fifth Cirrus* reduced to a mere thread, less than one-third as long as anterior ramus. *Sixth cirrus* in much the same condition, but with the posterior ramus relatively even shorter and finer. *Anal Appendages* slender, rather short, not swollen at the base, with about eight joints. *Penis* long, slender, indistinctly annulated.

Mouth-Parts—

Labrum fairly prominent, simple. *Mandible* with four teeth, the two innermost quite separate from one another, straight, simple, rather small.

Observations—

Unfortunately, owing to its small size and to lack of material, I can give no more than mere a diagnosis of this species. It appears to be closely related to *A. lankesterii*, Gruvel, from the West Indies, but can be distinguished by its larger opening, carinal crest and opaque integument. Without a more detailed examination it is impossible to say how far the internal characters of the two species agree.

II.

Indian Stalked Barnacles.

It is convenient that lists of the Indian Fauna should be published in India, and I have therefore ventured to print in these *Memoirs* a list consisting partly of names which are, for the present, *nomina nuda*. This reproach, however, will, I hope, be removed almost as soon as the present paper is issued, for I propose to diagnose the new forms in the "Natural History Notes from the R.I.M.S. Ship 'Investigator'" (*Ann. Mag. N. H.*) as soon as possible, and it is improbable that any of the descriptions will be anticipated. The number of these new forms is due to the fact that extremely few specimens from the seas of British India have hitherto been examined. This is especially true of deep-sea forms. Indeed, so far as I know, only two species (*Scalpellum squamuliferum* and *Megalasma carino-dentatum*) have been recorded from a depth greater than, or even approaching, 100 fathoms. Both of these were described by Weltner, who found them attached to a sponge dredged by the "Investigator" and sent to Europe for determination. Of the forms described by Hœk on the basis of "Challenger" material, four (possibly five) occur in the "Investigator" collection, all belonging to the genus *Scalpellum*. Of these, *S. acutum* was taken both in the Pacific and the Atlantic, so that its occurrence in the Indian Ocean as well is not surprising; *S. velutinum* has been dredged by various deep-sea expeditions at several points in the Atlantic between Portugal and a station south of Africa; *S. novæ-zelandiæ* was only known from off New Zealand, and *S. tenue* from a point in the south of the Indian Ocean near the Croizets.

Note—In the following list, species whose names are distinguished by a * are not yet described in print; their diagnoses will be published as noted above. Those whose names are indicated by a § are recorded in Gardner's *Fauna and Geography of the Maldives and Laccadives*, Vol. I, by Borradaile. Descriptions of the remainder will be found in Gruvel's recent *Monographie des Cirrhipèdes* (Paris, 1905.) I have omitted such common and universally distributed species as *Lepas anatifera* and *L. anserifera*, the latter of which is by far the most abundant form in the Indian Seas.

Stalked Barnacles from the Indian Seas.

Genus Scalpellum.

S. gruvelii,* Annand. ... ... Between Laccadives and mainland; Gulf of Manaar; Andaman Sea. 859-1,022 fath.

„ „ „ *var.* quadratum.* Gulf of Manaar. Between 859 and 880 fath.

„ laccadivcum,* Annand. ... Off Laccadives. 1,154 fath. On *Dentalium*.

„ „ *var.* investigatoris.* „ „ „ „ „ „

„ alcockianum,* Annand. ... Between Laccadives and mainland; Andaman Sea. 859-960 fath.

„ squamuliferum, Welt. ... Andaman Sea; B. of Bengal; off S. W. India. 112-1,840 fath.

„ bengalense,* Annand. ... Off Ganjam coast. Between 98 and 102 fath.

S. acutum, Hœk ... ... Andaman Sea. 490 fath.
„ velutinum, Hœk ... ... G. of Oman. 430 fath.
„ wood-masoni,* Annand. ... „ 890 fath.
„ tenue, Hœk ... ... B. of Bengal. 1,997 fath.
„ novæ-zelandiæ, Hœk ... Andaman Sea. 490 fath.
„ subflavum,* Annand. ... G. of Oman; off Cochin; G. of Manaar; Andaman Sea. 130-700 fath.

Genus MEGALASMA.

M. striatum *subs.* minus,* Annand. Andaman Sea. 161-484 fath.
„ carino-dentatum[1], Welt. ... „ 1,748 fath.

Genus PŒCILASMA.

P. kempferi, Darw. ... ... On *Echinoplax pungens*, G. of Manaar. 430 fath.
„ amygdalum, Aur. ... ... Andamans.

Genus DICHELASPIS.

D. pellucida, Darw. .... On *Enhydrina valakadien*, L. Burma.
„ lepadiformis, Gruv.... ... „ *Hydrus*, sp., Mergui; on *Distira robusta*, S. Arcot.
„ grayi[1],§ Darw. ... . „ *Hydrus platurus*, Maldives.
„ warwicki[1],§ (Gray) ... ... Maldives.
„ equina, Lanch. ... ... On various crabs (shallow water), East Indian and Ceylon coasts.

Genus CONCHODERMA.

C. hunteri,§ Darw. ... ... Maldives or Laccadives; Hugli Sandheads (Indian Museum).

Genus ALEPAS.

A. xenophoræ,* Annand. ... On *Xenophora*, sp., off S.W. India. 185 fath.
„ indica, Gruv. ... ... „ floating wood, Nicobars.

Genus LITHOTRYA.

L. dorsalis *var.* maldivensis[1],§ Borr.... Maldive coral-reefs.
„ „ „ rugata[1],§ Borr. ... „ „ „
„ nicobarica[1], Reinh. ... ... Nicobar „ „

[1] Not represented in the collection of the Indian Museum.

EXPLANATION OF PLATE.

Figs. 1, 1*a*—*Scalpellum inerme*. 1, Outline of capitulum and plates, x1. 1*a*, Mouth, 1st cirrus and opening of female genital organs, x2.

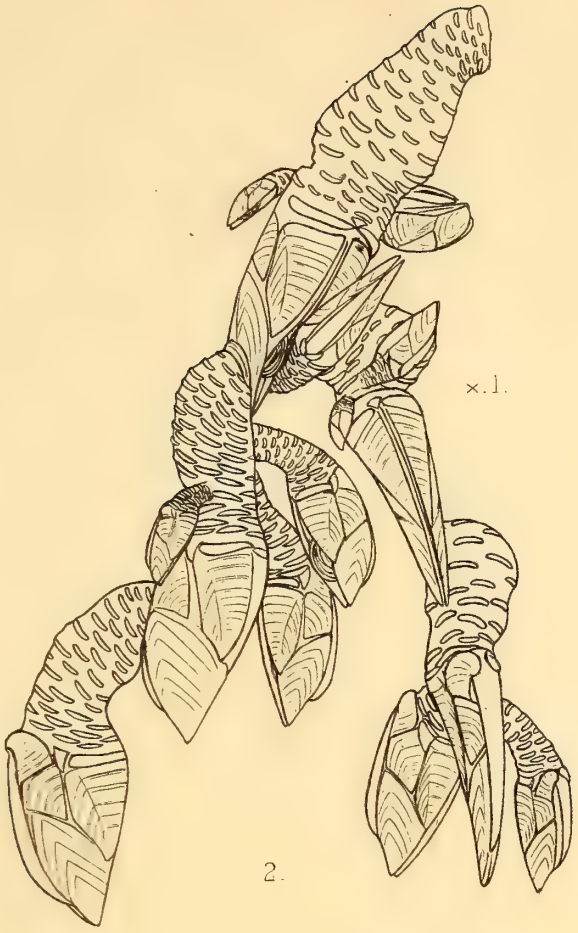
Fig. 2—*Scalpellum sociabile*, x1.

Figs. 3, 3*a*, 3*b*—*Alepas gigas*, 3, 3*a*, x1; 3*b*, Mandible, x10.

Figs. 4, 4*a*—*Alepas malaysiana*, x5.

×.5.

1a.



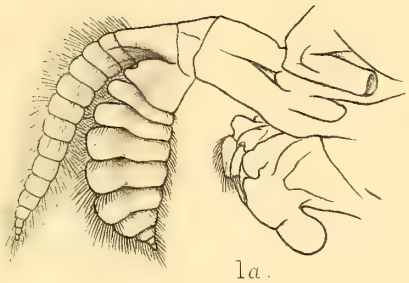
×.1.

2.

×.5.

4.

×.2.



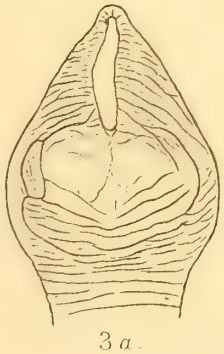
1a.

×.1.

3.

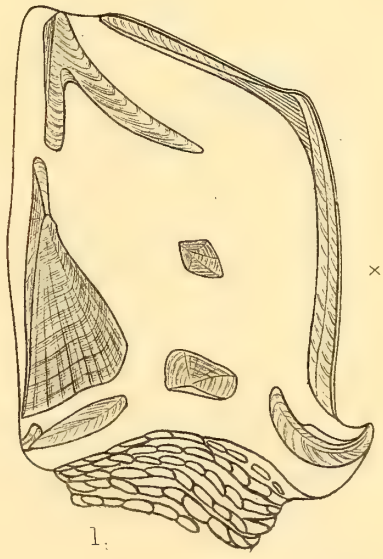
×.10.

3b.



×.1.

3a.



×.1.

1.

NEW BARNACLES FROM MALAYSIA.

Survey of India Offices, Calcutta, October, 1905

MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

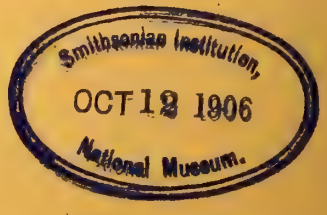
VOL. I, No. 6, pp. 85—91.

ASHRAFPUR COPPER-PLATE GRANTS OF DEVAKHADGA.

BY

GANGA MOHAN LASKAR, M.A.

(WITH ONE PLATE.)



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27-3-06

Memoirs of the Asiatic Society of Bengal.

1905.

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Amulets as Agents in the Prevention of Disease in Bengal.—Compiled in the Office of the Superintendent of Ethnography, Bengal. (In the press.)

Plate VII will be issued with a subsequent number of the *Memoirs*.

Ashrafpur Copper-Plate Grants of Devakhaḍga.

(With one plate.)

By Ganga Mohan Laskar, M.A.

[Read 1st November, 1904.]

These two copper-plates, together with a small *Caitya* of bronze, were found in the year 1884 or 1885 at the time of levelling down an earthen mound, near a big old tank, at the village of Ashrafpur, in the police station of Raipurā in the Dacca district in East Bengal. The village is about 30 miles north-east of Dacca and about five miles from the Sītal Lakṣā river. The plates and the *Catya* are now the property of the Asiatic Society of Bengal. The *Caitya* is described by Dr. Hoernle on pages 119-120 of the Proceedings of the Society for August, 1891, and a photograph of it is to be found after page 128 of the same. One of the plates, hereinafter called Plate A, was published by Rājā Rājendralal Mitra on pages 49-52 of the Proceedings for 1885, together with a *facsimile* and a tentative reading of the inscription. The other plate, to be called Plate B, is shortly noticed on page 242 of the Proceedings for December, 1890, and on page 119 of the Proceedings for 1891, and is now being properly edited for the first time. The readings of Plate A, published with Dr. Mitra's paper, contain several apparent inaccuracies. Therefore a revised transcription, together with a short description of this plate and an abstract of its contents, will form part of the present paper.

Each plate is surmounted by a seal which contains in high relief the figure of a bull couchant, and below this figure a line of writing which also is in relief. This line is distinct on Plate B and reads *Srīmad-Devakhaḍga.* The writing on the seal of Plate A has become illegible through corrosion, but it seems to contain the same letters as the other seal.

Plate A measures in average about 10 inches by $6\frac{1}{2}$ inches, and is not more than $\frac{1}{12}$ of an inch in average thickness. It weighs 11 *chhaṭāks* and 4 *tolās*, i.e., about 1·44 lbs. This plate has been greatly damaged by corrosion especially at the edges. The inscription has thus lost much at those parts, and does not therefore admit of a full and connected translation. An abstract of the contents will, however, be given below. By this charter, lands with a total area of 9 *pāṭakas* and 10 *droṇas* are granted to Buddhist monastic establishments, probably by King Devakhaḍga desirous to secure the longevity of his son *Rajārāja Bhaṭṭa.* All these establishments seem to have been under the supervision of a revered preceptor (आचार्यवन्द्य) Saṃghamitra by name. Besides the names of Devakhaḍga and Rājarāja, this charter mentions a *mahādevī* (Queen-Consort) named Prabhāvatī. The charter is dated the 13th day of Baisākha of Saṃvat 13.

Plate B measures $7\frac{1}{2}$ inches by 6 inches and has a thickness of about $\frac{1}{8}$ of an inch. It weighs 10 *chhaṭāks* and 4 *tolās* or about 1.31 lbs. Like the first plate, this one also is inscribed on one side only. This charter conveys 6 *pāṭakas* and 10 *droṇas* of land to the monastery of Samghamitra. The donor seems to have been the prince Rājarāja. The

charter is dated the 25th day of *Pauṣa* of the year 13 (Saṃvat 13). In addition to the names of Devakhaḍga and Rājarāja, mentioned in Plate A, this plate gives us the names of two other kings, *viz.*, Khaḍgodyama and Jātakhaḍga, the grandfather and the father respectively of Devakhaḍga, who was reigning at the time of these grants. It also mentions an Udīrṇakhaḍga, whose name indicates that he belonged to the royal family.

Both the charters were issued in the same year (Saṃvat 13) from the same place Jaya-Karmānta-Vāsaka. Both begin with verses in praise of Buddha or his religion. Both are written by the same clerk Pūradāsa, the devout Buddhist. These inscriptions are historically very important, as they disclose to us a hitherto unknown line of Buddhist kings who reigned in East Bengal probably before the time of the Pālas. These kings are :—

(1) Khaḍgodyama.
|
(1) Jātakhaḍga, son of (1)
|
(3) Devakhaḍga, son of (2)
|
(4) Rājarāja, the heir-apparent, son of (3).

We do not know anything about the predecessors of Khaḍgodyama and the successor of Rājarāja. Devakhaḍga was the king who reigned at the date of these charters, while Rājarāja was a prince, probably the heir-apparent at that time. Devakhaḍga's name occurs on the seals attached to the plates. Udīrṇakhaḍga was a member of the royal family ; we cannot say whether he was an ancestor of Devakhaḍga.

As stated above, both the charters are dated in the same year, *viz.*, Saṃvat 13, by which is probably meant the thirteenth year of the reign of Devakhaḍga. Palæographic considerations would lead us to place these inscriptions in the eighth or ninth century A.D. The approximate nature of the palæographic tests render it impossible to pronounce positively on the exact date of the plates, which cannot be settled until other records throwing fresh light on the kings mentioned in these inscriptions are discovered.

The extent of the sway of these kings is at present unknown, but the absence of the titles of paramount power such as *paramabhaṭṭāraka*, *pāramesvara*, &c., indicates that these kings were local kings of no very extensive dominion. The mound in which the plates were found probably marked the site of the monastery to which the grants were made. A place called *Talapāṭaka*, mentioned in line 8 of Plate B, has been identified by Mr. J. T. Rankin, Magistrate of Dacca, with *Talpārā*, a village under the police station of Raipurā (Dacca). He also suggests that the villge Duttgāon under the same police station may represent the place *Dattakaṭaka* (?) mentioned in line 10 of Plate A.

The words *pāṭaka*, *droṇa* and *droṇavāpa* are used in these inscriptions as measures of the areas of lands. *Droṇa* is found in Sanskrit dictionaries as a measure of volume, not of area. But it is extensively used, so far as I know, in many parts of East Bengal as a measure of area. It seems to me that the words *droṇa* and *droṇavāpa* indicate one and the same area of land, the word *droṇavāpa* literally meaning 'an area in which seed measuring one *droṇa* in volume can be sown (from the root *vap*, to sow).' Assuming then that

droṇa and *droṇavāpa* are the same area, we get the following equation from Plate B by an addition of the areas mentioned, and taking *Vatsanāgapāṭaka* as one *pāṭaka*, viz., 5 *pāṭakas*+60 *droṇavāpas*=6 *pāṭakas*+10 *droṇas* or *droṇavāpas*. According to this equation, 50 *droṇavāpas* or *droṇas* make one *pāṭaka*. The word *pāṭaka* means in Sanskrit 'a part of a village,' and is probably the original from which the Bengali word *pādā* is derived. In this very sense it forms parts of the proper names of a few villages or hamlets used in these inscriptions, such as *Talapāṭaka*, *Darapāṭaka* and *Markaṭāsīpāṭaka*, etc. It is also used in the plates under notice as a measure of area larger than a *droṇa*. The portions of the inscriptions in which the particulars of the lands granted are described are very irregular in construction; hence it has become difficult to know the relative values of the measures called *pāṭaka*, *droṇa* and *droṇavāpa*.

The language of both the inscriptions is Sanskrit, but it is very incorrect in some places, especially in the portions where the measures, situations and other particulars of the lands granted are described. Lines 1–3 and 15–17 of Plate A, and 1–7 and 17–22 of Plate B contain verses; the remaining parts of the inscription are in prose. The characters belong to the early Kuṭila variety of the Northern Alphabets. The *mātrās* or horizontal top-strokes are not well developed; the tops of such letters as *p*, *m*, *y*, *s*, *s*, &c., have their tops almost quite open. The *avagraha* does not occur, although there are two or three places where it might be used correctly. The *virāma* does not occur. The final form of *t* occurs in the word *saṃvat*. In the last line of Plate B, the number 25 is expressed by the numerical symbols for 20 and 5 respectively; while the number 13, which occurs twice in Plate A and once in Plate B, is expressed by the numerical symbol for 10 and decimal figure for 3. The script employed in these inscriptions looks generally older than those used in the inscriptions of the Pāla and Sena Kings of Bengal.

Abstract of the Contents of Plate A.

(Lines 1–2.) Svasti! Victorious is the Lord, the chief of the sages, who is the cause of the destruction of ignorance (*avidyā*) and who has crossed over the great ocean of *saṃsāra* (or the cycle of births and deaths).

(Lines 2–3.) Victorious is King Śrī-Devakhaḍga, whose footstool is illuminated by the jewels over the multitudes of the heads of numberless rulers of the earth, ... and who has conquered his enemies.

[Lines 3–10 give the measures and other particulars of the pieces of land granted; but owing to the damage sustained by the plate, no connected meaning can be made out from this portion of the inscription. A translation is attemped, but its correctness cannot be vouched for.]

(Lines 3–10.) [At ?] [A ?] talyodyānikataralā, *two pāṭakas* now enjoyed by the Queen-Consort Srī-Prabhāvatī; [½ (?) *pāṭaka* (?)] enjoyed by lady (?) Śubhaṃsukā (?); at Kodāracoraka *one-and-a-half pāṭaka* of Śrī-Mitrāvali, enjoyed by Sāmanta Vaṇṭiyoka; at [Re ?] latalaka, *one-and-a-half pāṭaka* enjoyed by Śrī-Netrabhaṭa, at (?) Paranāṭananāda Varmi . . . at Palaśata, *ten droṇavāpas;* at Śivahradikāsoggavargga, nartakī (?), *half a*

pāṭaka ; at (?) S'rīmeta (?), *one* (?) *pāṭaka* enjoyed by S'arvāntara and cultivated by Mahattara, S'ikhara, etc., together with two monastery-sites, *a pāṭaka* enjoyed by Bandya Jnānamati, at Rollavāyikā-Ugravoraka; at Tisanādajayadattakaṭaka, *the pāṭaka* of *Droṇimaṭhikā*.

(Lines 11–12.) The *viṣayapatis* (lords of districts) and dependents present in these *pāṭakas* exceeded by 10 *droṇas* are thus ordered :—

(Lines 12–15.) "Be it known to you that these 9 *pāṭakas* exceeded by 10 *droṇas*, [after having been taken away] from their present enjoyers, [are given to the charge of (?)] the revered preceptor saṃghamitra, [and thus] the four *vihāras* and *vihārikās* (*i.e.*, larger and smaller monasteries) are caused to be included within the same boundary. Therefore no hindrance to the gift is to be caused by the *viṣayapatis* and other [dependents].

(Line 15.) Saṃvat 13, the 13th day of *Baiṣākha*.

(Lines 15–17.) Life is fleeting . . . ; so, understanding that the gift of lands destroys miseries and fears, it is to be preserved by all enjoyers of happiness. The messenger here is the devout Sau[gata] *i.e.*, Buddhist . . . .

(Line 18.) Written at Jaya-Karmānta-vāsaka by Pūradāsa, the devout worshipper of Sugata (Buddha).

N.B.—The portions inside the brackets [ ] are supplied from conjecture based on the text of Plate B and other grants.

Translation of Plate B.

[Bull-couchant, S'rīmad-Devakhaḍga.]

(Lines 1–2.) Victorious are the ray-like words of the sun-like Jina (*i.e.*, Buddha), which dispel the darkness-like* *anus'aya*, which cause the lotus-like disciples to awake and which are skilled in scattering away (?) the prosperity (?) . . . . of Māra (the Buddhist satan).

(Lines 2–5.) S'rīmat-Khaḍgodyama, by whom, great devotion having been rendered to Lord Sugata whose glory is famous in the three worlds and who is [revered by] all the three worlds, and to his Religion of tranquil essence, reachable through the meditation of the ascetics able to break through the power of the world, (*i.e.*, the cycle of births and deaths) and to his matchless Congregation, the repository of all good qualities, this earth was (afterwards ?) conquered in all its parts.

(Lines 5–6.) From him was born King S'ri-Jātakhaḍga, by whom the multitudes of all his enemies were annihilated through heroism, as a piece of straw is by the wind and a number of horses by an elephant.

(Lines 6–7.) From him was born King S'rī-Devakhaḍga, and the latter's son was Rājarāja, by whom the destroyer of the fears of the three worlds, is given the gift of his

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* Anusáya—" Close connection as with a consequence, close attachment to any object ; (in phil.) *the consequence itself, the evil result of any act which clings to it and causes the soul after enjoying the temporary freedom from transmigration, which is the reward of its good deeds, to enter other bodies ;* repentance, regret, hatred, ancient or intense enmity " (Monier Williams). Here the word is used in the philosophical sense.

own land for the sake of the *gem-triad* (*i.e.*, the Buddhist Trinity of Buddha, Dharma and Saṃgha).

(Lines 7 to 14; descriptions of the measures and other particulars of the lands.) In Midikillikā-S'ālivardaka :—

At Talapāṭaka . . . . *half a pāṭaka* including the two areca-gardens, out of the *pāṭaka* now enjoyed by S'akraka; *twenty droṇavāpas*, formerly enjoyed by Upāsaka and now enjoyed by Svastiyoka.

At Markaṭāsīpāṭaka . . . . *twenty-seven droṇavāpas*, now enjoyed by Sulabdha and others; *thirteen droṇavāpas* cultivated by Rājadāsa and Durggaṭa; *Vatsanāgapāṭaka* reaching up to the temple of Buddha and given by Bṛhat-Parameśvara (the older King ?).

At Navaropya . . . . (*one*) *pāṭaka* given by S'ri-Udīrṇakhaḍga and now enjoyed by S'akraka.

At Paranāṭana (or—nāṭaka ?) nīla . . *half a pāṭaka.*

Also at Darapāṭaka . . . . . *one pāṭaka.*

At Dvārodaka . . . . . *half a pāṭaka.*

At Vvāramuggukā . . . . . *half a pāṭaka*, reaching up to Cāta.

(Lines 14–15.) [The King ?] thus orders the *viṣayapatis*, officers and other dependents present in these six *pāṭakas* exceeded by ten *droṇas* :—

(Lines 15–17.) "These *pāṭakas* exceeded by 10 *droṇas*, having been taken away from their present enjoyers, are given to the monastery of Saṃghamitra, the preceptor of S'ālivardaka; therefore no obstacle is to be caused by the dependents such as *viṣayapatis* and others." The messenger here is S'rī-Jajñavarman.

(Lines 17–22.) Considering prosperity and life to be as inconstant as a drop of water on the leaf of a lotus, and understanding all this which has been said, men should not cause the glories of others to disappear. Rama again and again prays this to all the future kings. This bridge of religious merit, common to all kings, is to be preserved at all times. Lands have been given by many kings commencing from Sagara; the religious merit accrues to every king to whomsoever the land may belong at any particular time.

(Line 22.) From Jayakarmānta-vāsaka.

(Line 23.) Written by Pūradāsa, the devout worshipper of Sugata. [Dated] Samvat 13;

(Line 24.) The 25th day of Pausa.

TRANSCRIPTION OF PLATE A.—(*from the original.*)

(1) स्वस्ति। जयत्यविद्याहतिहेतुभूत[1] संतीर्ण्ण संसारमहाम्बुराशि[2] अनुत्तरा वाग् (ग्र) .....

(2) ..भगवा(ं)[3]मुनीन्द्र। जयत्यशेषक्षितिपालमूलि[4] मालामणिद्योतितपादपीठ ....

(3) [पाद]प्रणतोत्तमांग[5] श्रीदेवखड्गो नृपतिर्ज्जितारिः। ०टल्योद्यानिकातरला सं....

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[1] Read भूतः। [2] Read ग्रिरन। [3] Read भगवान मनोन्द्रः। [4] Read मौलि। [5] माङ्गः।

(4) [महा]देवी श्रीप्रभावत्या भुज्यमाण[1] कपाटकद्वयभन्तदीका [or भट्टारीका ?] [शु]भं [or हं] सुकाया भुज्य...

(5) ०ककोदारत्तोरके श्रीमित्तावल्याः सामन्तवरिट्टयोकेन भुज्यमानक द्वार्ध...

(6) [रे]लतलके श्रीनेत्रभट्टेन भुज्यमानकद्वार्धपाटक परानाटननादवर्म्मि...

(7) त्यलग्रते दग्रद्रोणवापा शिवकन्दिका ग्रोग्गवर्गेनर्तकी अर्धपाटक...

(8) ..श्रीमेते श्रीग्रर्वान्तरेण भुज्यमानकमहत्तरशिखरादिभिः क्षय्यमा...[2]

(9) (प)टक विहारवास्तुद्वयेणवुरोल्लवायिका उग्रवोरके बन्धुज्ञानमतिना...

(10) कपाटक तीसनादजयदत्तकटके द्रोणिमठिकायोपाटक । ई...[3]

(11) षु पाटकेषु दग्रद्रोणाधिकेषु समुपगतविषयपतौ[4] कुटुम्बिनश्च समा....[5]

(12) [वि]दितमस्तुभवतां[6] एते दग्रद्रोणाधिकनवपाटका यथाभुञ्जनाद्...[7]

(13) राजराजभट्टस्यायुष्कामार्थं आचार्यवन्धुसंघमित्तापादैकारि.

(14) .. विहारविहारिकाचतुष्टयमेकग्रहीकृतं तद्विषयपत्यादि....[8]

(15) [9].... र्भवितव्यमिति सम्वत्[10] १० + ३ वैग्राख दि १० + ३ आयुश्चलं

(16) [ ] पुण्यं रसर्वगतिदुःखभयापहारि भूमेश्च दानमि [ ]

(17) बुध्वा भोगीश्वरैः सकरुणैः प्रतिपालनीयम् ॥ दूतकोऽत्र परम[सौ]...[11]

(18) [[लि]]खितं जयकर्मान्तवासके परमसौगतोपासकपूरदासे [[ने]][12]

Transcription of Plate B.—(*from the original.*)

श्रीमद्देवखड्ग ।

(1) जयन्ति भिन्नानुग्रयान्धकारा वैनेयपद्मान्यवबोधयन्तः वचोऽग्रवो[13] मार . .

(2) . . लक्ष्मीविक्षेपदक्षाजिनभास्करस्यः[14] त्रैलोक्यख्यातकीर्त्तौ भगवति सुगते सर्व्वलोक[ ]

(3) ... तद्धर्म्मे ग्रान्तरूपे भवविभवभिदां योगिनां योगगम्य तत्संघे चाप्रमेये वि-

(4) विधगुणनिधौ भक्तिमावेद्यगुर्वीं श्रीमत्खड्गोद्यमेन क्षितिरियमभितोनिर्जिता येन

(5) [पश्चाः ?] । तज्जः श्रीजातखड्गः क्षितिपतिरभवद्येन सर्वारिसंघो विध्वस्तःशूरभावा-

(6) त्तृणमिव मरुता दन्तिनेवाश्वबृन्दं तस्मा[15] श्रीदेवखड्गो नरपतिरभवत् तत्सुतो राजरा-

(7) जः दत्तं रत्नत्रयाय क्षितिभवभयभिदा येन दानं स्वभूमेः ॥ मिदिकिल्लिका ग्रालिवर्दके

(8) तलपाटके शुक्लकेन भुज्यमानकपाटकात् गुवाकवास्तुद्वयेण[16] सह अर्द्धपाटक उपा-

(9) सकेन शुक्लकाधुना स्वस्तियोकेन भुज्यमानक विंग्रति द्रोणवापा मर्कटासीपाटके

(10) सुलब्धादिभिः भुज्यमाणक[17] सप्ता[18] विंग्रति द्रोणवापा राजदासदुर्गटाभ्यां क्षय्यमाण-

(11) [को] (का ?) चयोदग्र द्रोणवापा बुद्धमण्डपप्रापि वृहत्परमेश्वरेण प्रतिपादितक वत्सनाग-

(12) पाटक नवरोप्ये श्रीउदीर्णखड्गेन प्रतिपादित शुक्लकेन भुज्यमानक पाटकाप-

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[1] मानक ।
[2] Supply and read क्षय्यमाणक ।
[3] Supply स्तेते ।
[4] पनीन ।
[5] Supply and read समाज्ञापयति ।
[6] Read भवताम् ।
[7] Supply-पनीय ।
[8] Supply कुटुम्बिभि ।
[9] Understand निर्विवादै ।
[10] Read संवत् ।
[11] Read सौमत ।
[12] Supply and read दासेनेति ।
[13] Read वचोऽंग्रवो ।
[14] Omit विसर्ग ।
[15] Read तस्मात् ।
[16] Read द्वयेन ।
[17] Read मानक ।
[18] Read सप्तविंग्रति ।

(13) र नाटन(or क ?)नौले अर्द्धपाटक दरपाटके[1] पि पाटक द्वारोदके अर्द्धपाट ज[2] व्वारमुग्ग-
(14) कायां चाटप्रापि अर्द्धपाटक इत्येवं षट्षु[3] पाटकेषु दश्नः[4]द्रोणाधिकेषु समुपग-
(15) तविषयपति[5]नधिकरणानि कुटुम्बिनश्च समाज्ञापयति एते पाटका दशद्रोणाधिका
(16) यथामुञ्जनादपनीय शालीवर्दकआचार्यसंघमित्रस्य विहारे प्रतिपादितास्तद्विषय-
(17) पत्यादिकुटुम्बिभि र्निराबाधैर्भवितव्यमिति दूतकोत्र श्रीयज्ञवर्म्मा:[6] । इति कमल-
(18) दलाम्बुविन्दुलोलां श्रियमनुचिन्त्य मनुष्यजीवितं च सकलमिदमुदाहृतं च बु-
(19) ध्व[7] नच्चि पुरुषैः परकीर्त्तयो विलोप्याः ॥ एतान्येतां[8] भाविनः पार्थिवेन्द्रां [9]भू-
(20) यो भूयो प्रार्थयत्येष रामः । सामान्योयं धर्म्मसेतु[10] नृपाणां काले काले
(21) पालनीयः क्रमेण:[11] ॥ बहुभिर्वसुधा दत्ता राजभिस्सगरादिभिः य-
(22) स्य यस्य यदा भूमिस्तस्य तस्य तदा फलम् ॥ जयकर्म्मान्तवासकात्
(23) लिखितं परमसौगतपूरदासेनेतिः[12] ॥ [13]सम्वत् १० + ३
(24) पौष दि २० + ५

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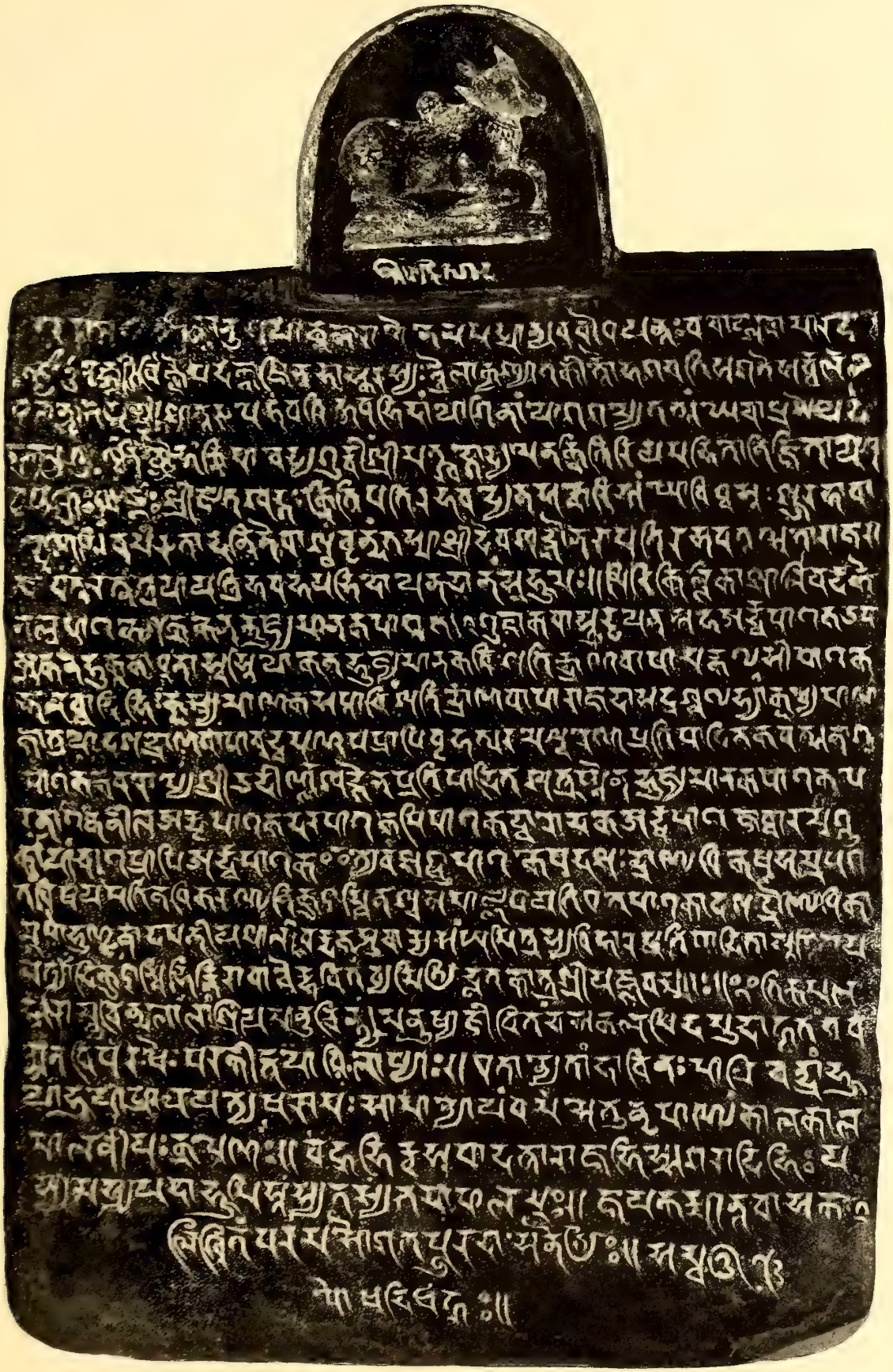
1 Read केऽपि ।
2 Probably पाटक व्वारमुग्गकायां is the correct expression.
3 Read षट्सु ।
4 Omit the विसर्ग ।
5 Read पनीन् ।
6 Omit विसर्ग ।
7 Read बुद्धा ।
8 Read एतानेतान् ।
9 Read न्द्रान् ।
10 तुर्ट्ट ।
11 Omit the विसर्ग ।
12 Omit the विसर्ग ।
13 Read संवत् ।

Plate illustrating Ganga Mohan Laskar's article in

Memoirs, Vol. I, No. 6.



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FESTIVALS AND FOLKLORE OF GILGIT.

BY

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Smithsonian Institution,
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By Ghulam Muhammad, *Chief Clerk in the Political Office, Gilgit.*

[Read July 5th, 1905.]

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Introduction.

In introducing the folklore and old customs of Gilgit, I may mention that great difficulty was experienced in collecting the material in a country which possesses no written record of any sort. I had to go from village to village and from house to house to gain information from anybody. After four years of incessant labour I collected some notes about the folklore, old customs, administration, tribes, games and past history of the country. The former two subjects, being of special interest, are now dealt with through the medium of this Society; the others will be published later in book form.

The inhabitants always call their valley by the name of "Gilit," not Gilgit. The word Gilit is probably the corrupted form of a Sanskrit word "Girit," which means a mountainous place.

This secluded valley, which was half a century ago unknown, has now, owing to the recent disturbances in Hunza, Nagir, Chilas and Chitral, become so well known to the world that it requires here merely a brief description for readers to form an idea as to its position and character.

Gilgit is situated 228 miles (sixteen stages) to the north-west of Srinagar, at an elevation of about 4,400 feet above sea level. During summer the thermometer rises to 115° and during winter falls to 15°. It is surrounded on the north by the small States of Hunza and Nagir, on the west by Punial and Yasin, on the south by Chilas and Kashmir, and on the east by Skardu. The district extends along the Astor, Indus and Gilgit rivers

from the Burzil Pass to the Sharot village, a distance of 143 miles from south-east towards north-west with its small surrounding valleys of Kamri, Tarsing, Parising, Sai, Haramosh and Bagrot; and along the Hunza river from Gilgit to Guech, with its adjacent valley of Naltar, a distance of 24 miles.

The country was first conquered in 1846 by the troops of His Highness the Maharaja of Kashmir under Syed Nathe Shah from Gauhar Aman, the Khushwakti Chief of Yasin, who had usurped the district from Sikander Khan and his brother Karim Khan, the rightful rulers of Gilgit. Karim Khan had escaped to Kashmir to ask for help, and returned with a large force under Syed Nathe Shah. Hearing the news of their approach, Gauhar Aman fled to Yasin, leaving the country to be possessed by them without bloodshed. The country was restored to the rightful rulers, but some later events lead the Maharaja of Kashmir to keep the district under the direct jurisdiction of his own officials. The British Agency was established in 1889. The Political Agent, an officer of the Government of India, and the Wazir-i-Wazarat, an official of His Highness the Maharaja of Kashmir, have their headquarters at Gilgit proper. The latter has jurisdiction over the district only, while the former, in addition to his control over Gilgit, has political relations with the surrounding states of Hunza, Nagir, Punial, Ishkuman, Yasin, Ghizr and the Chilas republic, which all acknowledge the suzerainty of the Kashmir Durbar. Gilgit is garrisoned by Kashmir Imperial Service Troops under a General Officer Commanding appointed by His Highness the Maharaja of Kashmir. The troops are relieved every two years.

A good pony road runs between Srinagar, Gilgit, Chitral and Hunza, remaining open for traffic from June to October. It is closed from November to May, owing to the heavy fall of snow on the Tragbal (Rajdiagan) and the Burzil passes. However, the ordinary letter post is carried across the passes at favourable opportunities by local runners. Kashmir, Gilgit and Chitral are also connected by a telegraph line.

The present inhabitants of the country are all Muhammadans, chiefly of the Shia sect, with a few Sunnis and Maulais. The principal tribes are Ronos, Shins, Yeshkuns Kashmiris, Kramins, Dums and Gujars. They are again divided into several families called after the names of distinguished ancestors. I am of the opinion that the Kramins are the original inhabitants of Gilgit, while the Yeshkuns, Shins and Ronos came afterwards in the above order and conquered the former inhabitants.

The Yeshkuns are probably an Aryan race, having arrived from Central Asia *viâ* the Hindu Kush. Being stronger than the aborigines, they succeeded in conquering these districts, made the original inhabitants their servants and named them " Kramins " (attendants).

The Shins profess to be the descendants of Arabs. They are probably Jews, and have come *viâ* Afghanistan from either Persia or Turkey. They prefer a style of self-government, and endeavour wherever they settle to continue this form of their original government. It is of interest to note, however, that before embracing Islam the Shins, in this resembling the Hindus, disliked meat, milk or even *ghi* made from cow's milk, disapproved of the keeping of fowls and regarded even a fish diet with aversion. If a Shin had taken two wives, one of his own tribe and the other of the Yeshkun tribe, the children

of the former would be Shins and those of the latter would be Yeshkuns. This shows that their family system takes the mother into consideration.

The Ronos are said to have come from Rajauri, a district in Kashmir, where they belonged to a ruling family of the district.

The Gujars have recently come to these parts and speak the same dialect as in India.

Besides these, there is another family of the former Muhammadan rulers of the country called "Rá." They originally came from Skardu about three centuries ago, and professed to be the descendants of Alexander the Great. The inhabitants considered them to have been born of a fairy, and this idea leads the people to think that their rulers were of a superior race touching on the divine, and that therefore it was necessary to honour and obey them.

The people live very simply, and their requirements are few. Each one is himself a cultivator, a weaver, a carpenter, etc. Their dress, which they weave from the wool of sheep and ibex, includes the *shuka* (cloak), woollen pantaloons, a woollen shirt and a rolled cap. The women wear loose trousers, a shirt and a cap, with a few silver ornaments and shell brooches. They wear on their feet a kind of leather socks called *pabboo*, made either of ibex skin or of cow hide. For hill journeys they wrap their feet in pieces of goat or ibex skin which they call *thauti*.

The chief amusement of the people is polo, which they play with the utmost zest, and shooting markhor, ibex and oorial with their matchlocks for the sake of meat, skin and wool.

The former language of the people was Sanskrit, but the dialect now spoken is generally called "Shina," though the Chitralis call it "Dangrik." It contains many Sanskrit as well as Persian words.

Such are the tribes to whom the folklore and customs appertain, but they have lived together for such a long period under the Buddhist and Muhammadan rulers that it is now difficult to know which of the ceremonies was originally observed by each separate tribe.

I.*

The Festival of "Shino Bazono."

The advent of spring in the Gilgit country brings with it the quaint festival of "Shino Bazono," which corresponds to the English May-day. It lasts about fifteen days, beginning in the middle of February and ending about the beginning of March. As indicating that the long cold winter is at an end with all its accompanying hardships, and that spring is nigh, bringing with it warmth and life and a renewal of the scanty stock of provisions which has run dangerously low during the past months, the festival is hailed with much rejoicing by the simple Gilgit folk. In order to observe this feast rightly, the people, twelve days before its commencement, put ten seers of wheat into a wooden basin. They fill this up with water and keep the mixture wet for five days, after which they take it out and place it in a small pit dug for the purpose in the ground, over which stones are heaped. The wheat is left in this pit for four days, after which the grain is seen

*[See also p. 119 *postea*.—Ed.]

to germinate. It is then taken out, dried and ground in one of the Gilgit water-mills. The flour so made is called *diram*, and of it a sweetmeat is compounded on the first of the month by adding some water, oil of apricots and walnuts to the flour and cooking the whole without the addition of any sugar. This sweetmeat has been tasted by the writer and is called *wailai diram*. It has a sweet flavour in spite of the absence of sugar, the fact being regarded as in a way miraculous. The remaining flour is utilized in making small flat loaves called *diram phiti*. This bread is eaten with raisins and oil. The combination is called *dracha bhat*. The feast is not, however, wholly of a vegetarian nature. In the month of "Nos" (about November) each family kills several sheep, and the meat is dried for future use. A leg and a tail are, however, set apart to be cooked on "Shino Bazono," and are then eaten with the *dracha bhat*.

The feast, which has been partaken of by all the members of the family together, being over, dancing commences and the following song is sung:—

(1) Aju kal ootá la Drároo aju kal chirring ga ootá.
(2) Goom ái chhani tharega, aju kal chirring ga ootá.
(3) Ghi ái chhani tharega, aju kal chirring ga ootá.
(4) Mos ái chhani tharega, aju kal chirring ga ootá.
(5) Mon ái sarai tharega aju kal chirring ga ootá.
(6) Ash to sho dez ik alo aju kal chirring ga ootá.

Translation:—

(1) May this year come again, oh Brethren, may such a year come again!
(2) We will have our stores filled with wheat, may such a year come again!
(3) Much *ghi* will be produced, may the next year be such a one!
(4) Quantities of meat will be stored, may the next year be such a one!
(5) Our vessels will be filled with wine, may such a year appear again!
(6) A blessed day has come to-day, may such a year appear again!

At noon all the fighting men assemble and make preparations for polo, while the women ascend to the roofs of the houses on each side of the road along which the procession to the polo-ground will pass. In their hands are long slender sticks, with which, as the procession passes, they belabour their heroes unmercifully. Koliwals are specially made the victims of this castigation. They are the trading community of the country, and the opportunity of paying off old scores is one not to be lost. An unpopular general dealer may consider himself fortunate if he escapes from the hands of these viragos with the payment of a forfeit of gold dust. Next comes the turn of the Rá or chief, who runs the gauntlet mounted. Galloping through, he salams with both hands to the women on either side, but even he is not allowed to pass without the bestowal of liberal largess on his fair subjects. It must be admitted that the ladies generally let him off lightly, for which no doubt they have their reasons. Possibly their position at court depends on it. On the arrival of the procession at the polo-ground, a goat is killed on one of the goal-stones. This sacrifice is called "Bazono-ai-Karai." The goat's head having been cut off, a rope is attached to it; the players then touch the head with their polo-sticks. After this a *doom* or drum-beater sets off at a run holding the end of the cord, to which the goat's head is attached behind. After him rides the raja or *trangfa* of the village, who strikes the head

repeatedly with his stick till they reach the opposite goal. This ends this part of the festival. Polo then begins, and, as is the fashion in these parts, is continued without intermission till the evening of the great day.

The "Ayi Boyi" Ceremony.

Ayi Boyi is the name of a Gilgiti month falling next to "Shino Bozino." The day fixed for performing the ceremony was publicly announced by the Rá throughout the village. All the boys and young men of the village assembled in the afternoon at a place just below the Rá's dwelling. The Rá used to sit on the roof of the house surrounded by his private servants, and a heap of walnuts was laid before him, while his followers laid a heap of ashes near them. The Rá then threw all the walnuts among the people below, who scrambled for them. While they were thus employed a heavy shower of ashes was hurled down by the Rá's servants upon them. In the merriment which followed, the people would rush towards the Rá, endeavouring to seize him or his servants, if they were strong enough to do so; while if they proved to be the weaker, the chief's followers would turn the tables against them. Should the chief himself or any of his suit fall into their hands, he was only released on the payment of a suitable forfeit; but, should the struggle result in the favour of the chief and his party, the prisoners made from among the people were released after a few days' captivity.

II.

The Ceremony of "Ganoni."

The inhabitants of these parts are strictly prohibited from tasting any new crop before accomplishing the "Ganoni" ceremony, which is celebrated in the middle of June, when the wheat and barley are ripe. The Rajah or headman of the village fixes and proclaims throughout his district the days for the performance of this ceremony, which is carried out in the following manner. On the afternoon of the day fixed the people set out to their fields with loaves fried in butter, which are greedily eaten at a corner of the field by all the members of the family. After this they cut some ears of barley, bring them to their homes, and keep them for a while on a fire. These husked and roasted grains are now put in a small basin filled with milk or curds. Of this milk every member of the family takes three wooden spoons full. Then national dances and vainglorious songs continue till late in the night.

The Duma Nikha Ceremony.

When the people have finished the labour of reaping and winnowing their spring and autumn crops, and have put the grain into bags to carry to their homes, they recite the following prayer:—

(1) Bismillah ya Khudaya Barakat deh.
(2) Oosum, Doosum ai Barakat deh.
(3) Kharki jawān ai Barakat deh.

(4) Katawāl, Batawāl ai Barakat deh.
(5) Gilit Malik ai Barakat deh.
(6) Sharo ai Rat ai lo bu sing Barakat deh.
(7) Owal ai sur ai Barakat deh.
(8) Jakun ai shing nikheh sang Barakat deh.
(9) Gogo ai dayin o sang Barakat deh.

Translation :—

(1) In thy name, O merciful Lord, give us abundance!
(2) Give us abundance like Oosum and Doosum (remarkable men of ancient times)!
(3) Give us abundance like the brave Kharki (Kharki, the people say, was $4\frac{1}{2}$ yards tall)!
(4) Give us abundance like Katawall and Batawall (also ancient heroes)!
(5) Give us prosperity like Malik, the Raja of Gilgit!
(6) Give us abundance, so that we may carry our grain home throughout the long night of autumn till it is dawn!
(7) Give us abundance like the long day of summer!
(8) Give us abundance till horns grow out of the ass!
(9) Give us abundance till a beard grows from the rocks!

After gathering their crops the inhabitants celebrate a festival called "Duma Nikha," an expression of their feeling of freedom from all agricultural labour, and indulge in recreations and games, the chief of which is polo. A goat is killed and roasted and the meat eaten at the place where they perform their dances, which continue late into the night. They also add to their enjoyment by shooting at a mark, after which the assembly breaks up.

III.

Marriage.

When a boy reaches 16 or 17 years of age, his parents begin to search for a wife for him, and as soon as they hear of a likely girl, they summon the headmen of their own village, to whom they give food, and request them to ask such and such a person to give his daughter in marriage. The headmen carry this message to the father of the girl, who entertains them for one or two days. During this time he summons his relatives and the headmen of his own village, in order to consult them in the matter. In the case of consent being given, a prayer is read by both the parties as sealing the promise. The boy's father now presents the following things to the girl's father in token of their new relationship :—

Cloth	...	5 yards.
Needle	...	1
Knife	...	1
Rope	...	1

A period is also fixed for celebrating the marriage, and the party returns. About a fortnight before the appointed time the father or guardian of the boy starts for the girl's village, with three tuloos of gold (1 tuloo = 8 mashas), which is given to her father, and fixes the number of individuals to join the procession, as well as the exact date of arrival. Returning home he makes all necessary arrangements and sends four seers of *ghi* called "tāo ai ghi" (*ghi* of the pan). The "Tāo" (pan) ceremony cannot be performed until this *ghi* reaches the party, so that should there be any delay in sending it, the side in fault pays one tuloo of gold as a fine for being late. The "Tāo" ceremony is performed before a number of the village people at 8. P.M., the night before marriage. A large iron pan is placed in the middle of the assembly, and a man of the Katchati or Babusi family rushes forth with some *ghi*, *atta*, and seeds of wild rue or leaves of *chili*; and, putting these things into the pan, burns a little fire under it till the contents begin to smoke. To fumigate all the air in the room he holds the pan by its brim and, lifting his hands above his head, commences to dance to the accompaniment of the band, while the people applaud and sing this song :—

(1) Tung tao Bair Gul yao
Tung tao Jet Tanya na diayam
Tung tao aki Tananam.
(2) Tung tao Gilit Malika
Tung tao Jet Tanya na diayam
Tung tao aki Tananam.
(3) Tung tao Rajat ai yashki, etc.
(4) Tung tao Romot ai yashki, etc.
(5) Tung tao Kashir Shah Mira, etc.
(6) Tung tao polo Maqpuna, etc.
(7) Tung tao beero Moghlota, etc.
(8) Tung tao uzir Khana Ra, etc.
(9) Tung tao Suchyo Girkisa, etc.
(10) Tung tao Maryo Machotya, etc.
(11) Tung tao Neelo But ajih, etc.

Translation—

(1) The pan belongs to Bair Gul.
I will never let anyone place this pan on the hearth,
I will place it there myself.
(2) The pan belongs to Malik, the chief of Gilgit.
I will never let any other place this pan on the hearth,
I will place it there myself.
(3) The pan is worthy of belonging to kings, etc.
(4) The pan is worth being kept by a family, etc.
(5) The pan belongs to Shah Mir, the chief of Kashmir, etc.
(6) The pan belongs to Maqpun, the chief of Skardu, etc.
(7) The pan belongs to Mughlot, the chief of Nagir, etc.

(8) The pan belongs to Khana, the Raja of Yasin, etc.
(9) The pan belongs to righteous Girkis (the ruler of Hunza).
(10) The pan belongs to Maryo, the son of Machat (a celebrated person of the Rono family), etc.
(11) The pan is placed on Neelo But, etc.

At the same time the women recite the following song :—

(1) Thoki loozham Bair Gul yao
Thoki loozham Jet Minyoiki na diyam
Thoki loozham aki Meenam.
(2) Thoki loozham Gilit Malika
Thoki loozham Jet Minyoiki na diyan
Thoki loozham aki Meenam.
(3—11) Etc. etc. etc.

Translation :—

(1) A large coral grain belongs to Bair Gul.
I will never let another string this on a thread.
I will string it myself.
(2) A large coral grain belongs to Malik, the chief of Gilgit.
I will never let another string this.
I will string it myself.
(3—11) Continues on the lines of above song till its end.

The Katchata then places the pan on the hearth for a moment, and then, lifting it up again, commences to dance and sing in the above manner. Once more he repeats his performance (the one which closes this "Duban" ceremony), and then bringing out a maiden from the crowd, employs her to cook, without assistance, some small cakes on the pan. When four or five cakes are ready she hands over her task to other women, who readily take it up. Leaving the women to cook a dinner for them, the men go to another room, where they make merry by dancing and singing throughout the night, which is called after this ceremony "Tāo ai Rat" (the night of the pan). If the procession has to go to a village at some distance, the bridegroom is bathed at dawn. Then, wearing as neat and clean clothes as they can afford, the retinue starts with the following song, which is recited by the bridegroom :—

"Aroo rake ar ga stomai dodai ajeh at salam ik theam."

Translation :—

I will go into my home and salute my dearest mother, whose milk I have sucked.

Herewith he proceeds to his home to salute his mother, and, on his return, the party recites the following poem :—

(1) Agooroo bai la agooroo but
(2) Ash to sho dez ik alo agooroo bai la agooroo but
(3) Nuh but sonai tulishi agoroo bai la agooroo but

Translation :—

(1) Grow heavy, O stone, grow heavy!
(2) A blessed day has come to-day.
Grow heavy, O stone, grow heavy!
(3) This stone will be weighted with gold.
Grow heavy, O stone, grow heavy!

At evening, when the party approaches their destination, a merry shout makes known their arrival and is echoed from the opposite party. Both parties, on entering the bride's house, compete with each other in reciting songs boasting of the noble and heroic deeds of their ancestors and their chiefs; and then, having taken their food, they continue dancing till late in the night. The next morning a mullah, who always accompanies the procession with the bridegroom, reads the marriage service. The girl's father then brings the ornaments, clothes and utensils, etc., for his daughter. If he is a well-to-do man he presents the above things without charging their price to her husband. If this be done, his son-in-law cannot, through all his life, lay any claim to the property, which is always considered to be that of his wife, and she can marry anyone she pleases on her husband's death. But if the girl's father, being in straitened circumstances, cannot afford to give the things without recovering their cost, the boy's father has to pay their equivalent at the time, in cattle or clothes, etc., or whatever amount the arbitrators may decide, and in this case the bridegroom has full control over the property; on his death his wife cannot marry anyone without obtaining the consent of his relatives. This custom is called *kalak malak*.

When the ceremonies are over, the bridegroom's party makes its preparations to return. To entice the damsel out of her home the people recite the following song:—

(1) Nikha mal ai bilili to ke khiaranini.
(2) Nikha char ai barai to ke khiaranini.
(3) Nikha sonelo jako to ke khiaranini.
(4) Nikha garo achiai to ke khiaranini.
(5) Nikha mukhailo doni to ke khiaranini.

Translation :—

(1) Come out, O beloved of your mother, why are you delaying?
(2) Come out, O water sprite, why are you delaying?
(3) Come out, O possessor of golden locks, why are you delaying?
(4) Come out, O mistress of charming eyes, why are you delaying?
(5) Come out, O owner of pearly teeth, why are you delaying?

On this she is brought out. She weeps bitterly at the separation from her relatives, and the assembly sings the following song:—

(1) Phonar ai molai ae nai ro Thhy rong bujai.
(2) Hun khin ajeh bujai molai ae Thhy rong bujai.
(3) Thy hiyo dija ae na'ro molai ae Thhy rong bujai.

Translation :—

(1) Do not weep, O flower-like girl, thy complexion will turn pale!
(2) Thou wilt go on a lofty hill, O girl, thy complexion will turn pale.
(3) Thou wilt (by weeping) burn your heart, thy complexion will turn pale.

In Shinaki there is a custom called "Kao." If a young man has determined to marry a certain girl but her parents are not willing to give her to him, the young man either calls out in an assembly of the village headmen:—"The girl is mine, and I will perform 'Kao' if she is not given to me." Sometimes in order to assemble the people he fires a gun outside the village and utters the same words in the presence of those who collect; or if he gets an opportunity he tears the girl's shirt slightly in the presence of some other men and says to her:—"You are mine." When this has been done, the parents are obliged to marry the girl to him, but they can demand from him whatever they like up to the limit of his means. If they marry the girl to anyone else, the young man will murder the girl as well as her husband as soon as he gets an opportunity.

IV.

The Ceremony of "Seelo-ai-Thali" (Seat of Chastity).

This ceremony was performed for old women, who have been virtuous and chaste throughout their lives. These women were called "Seelo," and their descendants were very proud of them, so that on the occasion of family quarrels they used to say to the opposite party, "What have you to say to us? Our mother is "Seelo," while yours is not." To accomplish this rite, an elevated stone platform, about five yards each in length and breadth and a yard in height, was erected by the woman's nearest relatives. On the day appointed all her kinsmen came to the place, with a white she-goat as a sacred judge, to decide the fate of the old woman. The latter was clad in silk and placed on a bench. The eldest of the family bound a silk turban on his head, as well as on that of the goat; and, placing the goat below the bench with its face westward, addressed it in the following manner:—

"O thou white goat, if my daughter" (or whatever relative the woman was to the speaker) "has throughout her life lived an honest, virtuous and pious life and has remained clear of the sins and crimes of falsehood, theft, debauchery and treachery, be pleased to salute this bench for the sake of such a righteous and godly woman." In the case of the woman having led a blameless life, the goat by touching the bench approved her virtue. The assembled crowd then broke forth in cheers, and as an expression of their joy the relatives killed several goats and fed the people present. But if it happened otherwise, and the goat instead of performing what was considered an obeisance to the bench, ran round it bleating, then a great shame took hold of all the woman's kinsmen, and they ran away to their homes, never to speak to her again during the remainder of her life.

V.

The Ceremony of Nagi Suchemi.

Nagi Suchemi is said to be a goddess who lived at Nangam in the Astore district, on a stone altar situated at the foot of the Nagishi hill. In former times cases of theft requiring settlement by oath were decided by the defendant's swearing on this sacred platform in the following manner. A man called Jungmi was specially appointed by the Rá to accompany the defendant to the place, receiving eight yards of cloth from the suspected person. A she-goat was killed on the altar and the meat cooked and eaten by all those present, in utensils which were always kept and are still kept there. The defendant had now to utter the following words loudly: "O Nagi Sochemi, inflict punishment upon me if I am guilty of the crime, but, if the plaintiff has laid a false claim upon me, be so kind as to inflict a calamity on him!" They then returned quietly to their homes in the darkness of night. None of the men who had attended this solemnity were allowed to appear in daylight before others of the village, and if by chance one of them showed himself to any villager, he had to repay whatever loss there arose from the theft, or from any untoward circumstance happening to the discoverer of the offending juryman at dawn of that day. For some days the case was left awaiting the decision of "Nagi Sochemi," and if in this period the suspected person suffered any kind of loss of property, of relatives, etc., he was adjudged guilty, and the total amount of loss by the theft was recovered from him and repaid to the plaintiff.

"Khuran" or "Majari."

In Chilas and in the adjacent valleys of Jalkot, Palas, Koli, Darel, Tangir, Gor, Harban, and Sazin, the disputes between two individuals or parties are settled by a peculiar ceremony called "Khuran" in Shinaki (Chilas, Darel, Tangir, Gor, Harban and Sazin), and "Majari" in Kohistan (Jalkot, Palas, and Koli). By this ceremony each of the opposite parties has to prove itself wealthier than the other, and whichever proves to be the poorer is forced to submit to the other. The ceremony is performed by each party giving food to all the villagers at a place called "Kai." Whichever party provides the larger feast gains the day, while the other must needs submit.

VI.

Danyals.

There are some men and women of these parts who are called Danyals. When they are worked up into a state of frenzy the giants and fairies instruct them concerning the future of the country, the chiefs, etc. Whenever a chief is inquisitive on the subject of his future, he sends for the Danyals as well as the local musicians. A bundle of green chili leaves is then brought, and some of these, with a little *ghi*, are put into a small fire and burnt in an enclosure set apart for the purpose. As soon as the smoke rises, one or two Danyals push their way towards the fire and begin to inhale the smoke, until

they lose their senses and commence to dance to the noise of the drums. They also eat some of the extremely bitter leaves of the "chili" (*Juniperus macrocarpa*) while dancing. The music then becomes fast and furious, and the onlookers cheer loudly. The Danyals glance from time to time towards the surrounding trees, among which the giants and fairies have taken up a position. After a short dance the Danyals place their hands on the shoulders of the drum-beaters and their ears on the drums, as if they are very attentively listening to what the drums says. In a short time they again commence dancing, and sing the prophecies they have been told by the drums. If there be anybody present wearing red clothes when a Danyal is dancing, the Danyal is much annoyed and rushes at him. No man clad in red[1] clothes is therefore allowed to be present. After an hour's dance the performance closes, and one or two strong men appear in the circle, and the Danyals climb upon their backs and are carried away out of the enclosure to a house, on which after a short rest they recover from their frenzy.

I once asked a Danyal woman of Gilgit how she had become a Danyal, and after long hesitation she related to me the following story: "When about seven years of age I used to go with my flocks to the distant pastures on the hills. Once I saw a fairy sitting on a Chili tree and eating its leaves. Her eyes were brilliant and large, with thick eyebrows, which were high above the eyes and almost joining the hair of her head. She came towards me and asked me to accompany her, saying that her house was built of gold, and that I should be well feasted there. Hearing this I lost my senses, and as I was then standing on the edge of a stream, I fell down into it and got a severe wound on the right thigh. Some of the shepherd boys who were also feeding their flocks at some distance saw me fall, and, hastily taking me out of the water, carried me to the village. My father then killed a goat in order to ascertain if I were really under the power of the fairies, and I drank all of its blood, but I was unconscious of what was going on around and remained in this state for about ten days without taking any food. During this time the number of giants and fairies which appeared to me increased to fourteen, of whom seven were Muhammadans and seven Hindus, each sect remaining apart. Their queen, who was Hindu, was clad like a fakir and had gathered her hair on the top of her head, upon which she wore a cap. They brought and showed me different kinds of food, but gave me nothing to eat. In these days they taught me to dance, and the following two incantations called "Gano" and "Wiyo":—

Gano.

Ganam, Ganam, Trakhan ai Zooli ganam; Zooli ai Hazooli ganam; Yun ai ganooli ganam; Pa ai paroni ganam; Ding dolok ganam; Tip phililil ganam; Jin janwar ganam; Ashpo ai choro ganam; Jakun ai goko ganam; Ajeh ai oran ganam; Ayi ai chhal ganam; Turmuk ai shoolo ganam; Bun ai shara ganam; Neeli jut ganam; Shiril ai shani ganam; Dewak ai chhai ganam; Chai chatri joo ganam; Musha birga ai joo ganam; Dewak ai pun ganam; Aga ai tare ganam; Birdi ai bathai ganam; Sat khap

[1] When I first saw a dance by a Danyal woman in 1893 at Gilgit, a man with a red umbrella came into the circle. This enraged the dancer, although she herself was wearing red chintz.

paryan ganam; Hul ai sar ganam; Sar ai nistai ganam; Yujan ai batheli ganam; Batheli ai Chhai ganam; Sum ai sumading ganam; Joo janwar ganam; Soni sarplok ganam; Sat khap barai ganam; Drang ai dam ganam; Khirte das ganam; Hunte rong ganam; Chin chili ganam; Neeli nistai ganam; Jun ai ayin ganam; Taru ai shur ganam; Trakhan ai Yudaini ganam; Yudaini ai Hazooli ganam; Gao ai bashoshi ganam.

Wiyo.

Muti, Muti, Trakhan ai Zooli muti; Zooli ai Hazooli muti, &c. &c., continues in the same way up to end of Gano.

Translation—

Gano.

I will bind, I will bind, I will bind Zooli (a fairy) of Trakhan (a chief of Gilgit). I will bind Hazooli the daughter of Zooli. I will bind Ganooli the daughter of Yun (a fairy, also the moon). I will bind the sole of the foot. I will bind Ding (a giant) of the lower strata of the earth. I will bind all the insects. I will bind giants and wild animals. I will bind the colt of a mare. I will bind the offspring of an ass. I will bind the lamb of a sheep. I will bind the kid of a goat. I will bind the bullet of a gun. I will bind the markhors of the jungle. I will bind the green pastures. I will bind the fields of fairies. I will bind the key of demons. I will bind the pregnant women. I will bind men for fighting. I will bind the way of giants. I will bind the stars of the sky. I will bind the pieces of the earth. I will bind seven hundred fairies. I will bind the springs of ocean. I will bind the outlets of springs. I will bind Bathelo (a fort of fairies) on Yujan (Nanga Parbat or Dyamur Mountain, situated on the west of Astore). I will bind the key of Bathela. I will bind Sumading (a giant) of earth. I will bind all creation. I will bind Soni (a giant) of the upper strata of the earth. I will bind seven hundred daughters of fairies. I will bind the booming of drums. I will bind the lower plains. I will bind the upper pastures. I will bind all the *chili* trees. I will bind the green banners of the fairies. I will bind the mouth of serpents. I will bind the voice of the flute. I will bind Yudaini (the fairy drum which is said to be beaten by fairies on Khama, a mountain near Bulchi, a village in the Bagrot Valley) of Trakhan. I will bind Hazooli (a fairy) of Yudaini. I will bind the calf of the cow.

Wiyo.

I will release, I will release, I will release Zooli of Trakhan. I will release Hazooli, the daughter of Zooli.

&c. &c. &c.

If it is wished to restrain any person, phenomenon, thought, wish or desire, &c., from their natural course of action, the "Gano" is read by the Danyals on a small stone, which is then thrown towards the person or thing interested. By reciting the "Wiyo" in the same way on another stone, the person or thing is again rendered active.

Yāthini.

Adjacent to and on the southern side of Basin, a village about three miles west of Gilgit, there stands a cliff at the junction of the Kargah and Naupur nullahs. A large image of an erect Buddha has been sculptured on the rock-face, about 30 feet above the ground. It is without doubt a sculpture of ancient date and shows that the valley was once inhabited by a race professing Buddhism. The people call it "Yāthini" (giantess), and relate an interesting story about it. They say that she was the sister of Shri Badat, a King of Gilgit who was the descendant of giants. She lived on the said rock and, being a man-eater like her brother, was in the habit of killing and devouring half as many of the men as happened to pass by, leaving the other half unmolested. The princess continued this practice for a long period, to the great distress of the inhabitants, until a certain Danyal named Soglio, feeling the loss of so many people dear to his heart, devised a successful plan of murdering her in order to save his beloved countrymen. With the above design in his mind he set out for the place with a party of brave and bold men. Reaching the spot he burnt a small fire at the foot of the said rock, and his companions took their seat around it in a small circle. The Danyal, according to his usual custom, put some *chili* (juniper) leaves on the fire and inhaled its smoke. Thus driving himself into a state of ecstacy, he commenced dancing and singing some magic incantations, which were repeated by his companions. The Yāthini was elated at the prospect of more victims. As soon as she approached the Danyal he stepped forward and addressed her in a song, of which the following is a translation :—

"Have not you heard, O lovely princess, that your father has expired to-day?" Hearing this sad news, she struck her breast with her right hand. Soglio, who had with him some long iron nails, thrust one of them through her hand, as it lay on her breast, with such rapidity and strength that the nail penetrated her chest and went far into the rock behind. Soglio then sang another song, in which he sang as follows :—"Have not you heard, O charming princess, that your brother has also died to-day? On this she struck her second hand on her thigh. Soglio quickly pierced this with another sharp nail. The Yāthini was thus firmly fixed to the rock, and was unable to move, or to take revenge. The party was much delighted at this success of the Danyal, who further turned her into a stone by his prayer, and even more delighted were the inhabitants when they heard of the good news. The unfortunate Soglio requested the people to bury him on his death near the Yāthini, as otherwise she would return to life and continue her cruelties. The people, who had now obtained their desire, held a private council to discuss the matter. They argued that no one could tell when and where Soglio would die, and whether they would be alive or able to procure his body at the time, should he die in some far-away country or by drowning in the river; in which case the Yāthini would recommence her practices with renewed ferocity. After a long debate they thought it best to assassinate Soglio at once. A man was appointed to accomplish the horrible task, which he did, and Soglio was at the same time buried close to the figure on the rock.

VII.

Omens.

Probably on account of the frequent attacks on Gilgit made by the chiefs of the surrounding States, certain signs and occurrences are considered to be omens among the Gilgitis. They are as follows :—

(1) If an unusually heavy rain falls at any season in Gilgit, it is supposed that the chief of Yasin will advance towards Gilgit.

(2) If innumerable kites are seen hovering over Gilgit, it is generally accepted that Gilgit is to be invaded by the Nagar people.

(3) If packs of wolves make frequent night visits into Gilgit, and inflict heavy losses among the flocks, it is affirmed that the chief of Hunza is certainly going to invade and plunder Gilgit.

(4) If the harvest be unusually abundant, it is believed that Gilgit will be attacked by the Punyal Chiefs.

VIII.

Lunar Eclipse.

The Gilgitis say that Grahn is the name of a giant, who is a lover of the moon. On the 14th of the lunar months, when the moon is in its full beauty, the Grahn, whenever he pleases, catches hold of the moon, leaving untouched only a part which contains a fig tree. At such time the people of these parts beat their iron pans (on which they cook bread) like drums and cry loudly,"O Grahn, we have brought a large force, beating drums against thee, leave her (the moon), or we will rush upon thee?"
In the meantime the eclipse ends, and they become happy at their success.

Solar Eclipse.

The Gilgit people say that whenever any good king dies or is banished from his country, the giant Grahn becomes angry against the sun, and darkens a whole or a part of his (the sun's) face as a sign of grief for the death or the banishment of such a good king.

IX.

The Creation of the World.

It is said that the earth was at first enveloped in water, which was at some places frozen, and where some Yaths (giants) had taken their abode under Yamlo Hal Singh, their ruler. On a certain day they held a council for the purpose of bringing earth over the water. Their ruler said that the task was above their power but, however, he knew of a wolf called Bojare Shal who lived at a place named Milgamok (old ice) and who, owing to his great genius, would he able to perform this work. "Provision[1]," was first sent as a messenger by the Yaths, but the wolf refused to come, saying that he would not

[1] [In answer to a question regarding this name, the author of the paper informs me that the original word is *rogi*, which may also mean "fortune."—Ed.]

keep trust in Provision, who was a servant of everybody. On this the Yaths sent "Trust" to the wolf, and he came with him to the ruler of the Yaths. The object was explained to him and he said that a bird called Garai Patan, who lived on the snows on the Coxus Mountain, should be sent for at once. Provision was first made the messenger; but the bird declined to come; whereupon Trust was sent to him and he came to see Bojare Shal and Yamlo Hal Singh. Bojare Shal now sent for a mouse which lived close to his home. When everything was ready the wolf gave orders that Yamlo Hal Singh should stand in water as a pillar upon which Gorai Pattan should spread his wings, while the mouse by the making a hole into the ice should bring out and spread all the soil over the wings of Gorai Pattan. The orders were obeyed and the wings of the bird covered all the water, while the mouse brought out all the soil which was beneath the water. In this way the earth was turned over the water.

X.*

"Neelo But" (The Blue Stone).

There used to be at Gilgit a blue stone called "Neelo But," about a yard square, where the present telegraph office is situated. No king was acknowledged in the country unless he had resorted to it and prostrated himself before the stone. There and then the people adorned his head with a crown, swore fealty and tendered their allegiance. This was the day when all the better class would gather to see the new "Rá" perform all the ceremonies, and undergo all obligations considered necessary to the office of leader of the nation. This was done in order to secure their confidence by a man who was to become sole director over their destinies, among them being many who had taken an active part in bringing him to the throne and proclaiming him their chief.

When the ceremonies were over, all came one by one to kiss his hands, to receive his blessings and to bless him in return. They would then dance to the beating of drums, make merry, sing praises and recite poems describing the heroic deeds already performed by the Rá, his ancestors and others whose lives had become endeared to all by self-sacrifice in the cause of their country.

The *danyal* (soothsayer) was not left out on this occasion, for it was necessary to foretell the future of the king and his courtiers, and to exhibit the state of ecstacy that accompanies prophecy by the soothsayer. Before being dismissed at night all present partook of a feast; some were gratified with handsome *khilats* and other distinctions; some gratified by a gesture of kindliness

The Ceremony of Shri Bai.

Shri Bai is the name of a goddess who, as the people say, lived on a rock at Nangam, a village in the Astore district. The rock too is called Shri Bai, and is always kept covered with branches of juniper, while an attendant called "Boh Bin" resides there to look after it. Barren women used to sacrifice goats to and pray before the sacred stone in the hope of progeny. In the hot weather, when the people had gathered their

* [See also p. 103 *antea*.—Ed.]

crops, the female population of the village proceeded to the Devi in their best attire. They sang on their way, and when they reached their destination presented a goat to the "Boh Bin." He then threw up some small branches of the juniper in the air, and the women attempted to catch them before they fell to the ground. It was believed that a woman would be blessed with as many children as the branches she succeeded in catching. Descendants of the original "Boh Bin" still remain, but the ceremony is no longer observed.

A stone of this kind is also found at Barmas near Gilgit. The ceremony performed upon this stone was exactly the same as stated above, but it has a different name, *viz*: "Mulkum."

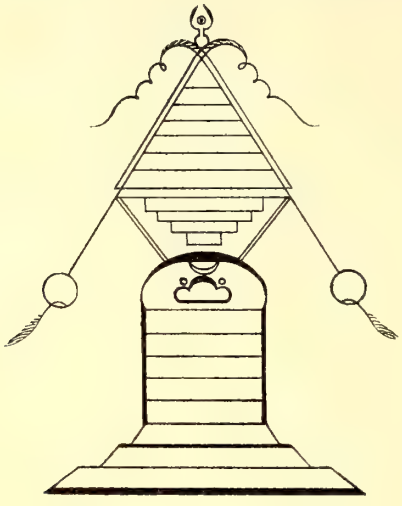
"Rato" or "Chili."

At Farfuh, a village in the Bagrot valley, there are five small portions of land situated at the foot of a mountain and called Chuto Rato, Shilo Rato, Surgon Rato, Chilko Rato and Thoko Rato. In these tracts there are five very large boulders and five small stones, called respectively "Dev-ai-Maron" and "Mos Samaran Ken" (*i.e.*, stone for distributing flesh). Here the "Rato" ceremony, also called "Chili," used to be performed as follows. During the first six days of the ceremony, which lasted for seven days, the people wore new and clean clothes, the sexes being separated and inhabiting different houses. On the seventh or the last day, all the people of the different communities or families of the village assembled separately and went to their respective "Ratos" with a goat and some young branches of the chili or *Juniperus macrocarpa*. These branches were placed upon the "Dev-ai-Maron," and the blood of the goat which was now sacrificed was thrown on. The meat was placed on the "Mos Samaran Ken" and distributed among those present, who roasted and ate it at the same place. It was never given to any woman or to a man of any family other than that of "Rato." The shoulder-blade of the goat killed was then placed on a high stone and fired at by marksmen amidst the noisy acclamations of the people, and a dance was held in honour of the sacred ceremony. After this the people assembled round the "Dev-ai-Maron," while the oldest man present or the headman of the village sat quite close to the stone and addressed it in the following manner: "O iron-like Rato, O Shri Bagartham, we have come to thee to express our wants. We have no progeny: kindly endow us with children. We are destitute of money: kindly favour us with gold and silver. We are in want of grain: please supply us." In the same manner he related all their desires for cattle, clothes, goods, etc., while the other men followed him and expressed their assent to what he said by crying "Amen." The women of the village now appeared in their best attire, with some dry flour and small flat loaves. They threw the *atta* on the *chili* branches and prayed in the same manner for the fulfilling of their desires. The loaves were distributed among the men, who eat and rejoiced. At some places the women were strictly prohibited from going near the Rato stone. This ceremony was performed and known by the same name throughout the whole of Gilgit, but on stones of different names, so that the stones at Datuchi and Bulchi were called "Aju Bin," at Sinakar "Shri Bin," at Gilgit and Dainyor "Rato-denaken," and at Naugam "Shri Bai." The

"Shri Bai" ceremony, performed with a slight difference at Naugam, will be dealt with separately.

Sculptured Stones.*

On the bank of the Indus river a big stone is seen about a mile's distance from the entrance of Botugah Nullah (Chilas Nullah) where there stand some boatmen's huts. It bears a figure of a Buddhist *Mane* [?]. The carving begins a little above the foot of the stone. In height it is a little larger than a man. Though faintly engraved, it is so skilfully whitened that, although it has been exposed for so long a time to the action



of the weather, its white colour is still to be remarked from a distance. On this rock there are also many other figures of the same kind, but they are somewhat smaller in size than the one above mentioned. Some two or three miles below this place, there are numerous stones of various sizes on the river bank bearing the figures of goats and markhors, &c. Some of the stones show representations of axes, while the others are those of deer. At some places the carvings are seen on the top of a stone as well as on its sides. The same kind of figures are also seen in the Bagrot Valley engraved on rock-faces between the Sanikar and Bulchi villages.[1]

At Barmas, near Damot, in the Sai valley, there are two pictures of Buddha. One is carved on a stone, and the other is a painting of Buddha sitting among his disciples.

At another place, in the neighbourhood of Chilas, there is a rock still larger in size, and on its river side there are a good many figures. There are also two or three carvings of temples with a large number of men, goats, horses and cows, &c., engraved on them. On this stone there is an inscription written in some ancient character. The same carvings are noticed for some way along the river, which here does not rise sufficiently in summer to do them any injury. It shows that in a certain period, this part of Chilas was inhabited by Buddhists. The inhabitants of Chilas are under the impression that all these inscriptions are made by the fairies.[2] The tradition is that in ancient times the land was

[1] These villages are situated in the Laspur Valley.

[2] [A similar belief is held by the Malays (Muhammadans) of Lower Siam and Pahang regarding the "Orang Parai" (Peris), and certain clay tablets of Buddhistic origin found in caves. See Steffen, *Man*, 1902, No. 125.—Ed.]

*[See also p. 106 *antea*.—Ed.]

frequently visited by fairies who used to make these inscriptions, as in the opinion of the Chilasis it is beyond man's power to produce such inscriptions. It is also affirmed that these fairies were seen in those days by all men, but nowadays they are visible to no one except to a great Mullah by dint of his miracles. The Bagrot people say that the carvings were inscribed on stones by the fairies on the night of "Shino Bazono;" and that on the same night the fairies frequently used to rub away the figures from one stone and to engrave the same on another.

The Ceremony of Sri Kun.

Sri Kun is said to be the sister of Nagi Sochemi, and lived at Shankank, a village near Godai in the District of Astore. The villagers used to present goats to this goddess and prayed before her seat for the supply of their wants. Her followers were strictly prohibited from keeping cows, or drinking their milk, and were under the impression that by so doing they were apt to lose their flocks, herds, or the produce of their lands.

"Jainkish" and "Dewaro."

At Gilgit proper and in the surrounding villages there are seen two small tracts of land called "Jainkish" and "Dewaro." The former is situated on the river bank and the latter at the foot of a hill, except at some places in which they both are found at the foot of a hill. In ancient times, when Islam had not spread to these parts, the tribes used to burn the dead at "Jainkish," and a few days after they gathered and carried away the bones to "Dewaro," where they buried them in one pit. Remnants of bones still mark these places, though the traces have almost been obliterated by time. In these circumstances, however, one is not wrong in supposing that Muhammadanism is of recent growth.

Several old men still living at Gilgit relate that they used to play with the brass bangles and rings which they found in "Jainkish;" but to carry away such articles to their houses was considered improper. From this it appears that the dead bodies were burnt with their ornaments.

Sankar Village and a "Chinar" Tree.

There is a small populous village named Sankar in the Bagrot Valley. It is said that when this tract was lying waste, a Fakir named Shah Burya passed through and halted there for a short time. Becoming thirsty and finding no water, he prayed to God for a good supply. His prayer was granted, and a sufficient quantity of water burst forth from an adjacent hill. After a few days Shah Burya felt the heat of the sun, and planting his stick, which was of *chinar* wood, deep into the ground, prayed again to the Almighty to make it into a large *chinar* tree. This prayer was also granted, and a big tree grew, under whose shadow he afterwards used to sit. The branches of this tree are said to have been once so large and spreading that they touched the neighbouring hill about 600 yards distant, across the Bagrot Nullah. The tree was afterwards burnt by the Mongols, but after a short period five shoots sprang out from its trunk, and these are still to be seen, forming an enclosure about 30 yards wide.

A Pearl Tree on the Deobani Mountain.

On the east of Tashot, a village in the Bagrot Valley, there stands a snow-covered mountain called Deobani. The people say that there is a large pearl tree on its top, which is the property of the fairies and giants. A good mountaineer is said to have once reached its summit. Gathering a load of the pearls, he started down towards his home. But he was surprised to see a crowd of giants and fairies coming after him, and, being frightened by their approach, he thought it better to throw away all the pearls in order to save his life; he was surprised, however, to find that a fairy still followed him as far as his house. There he closed his door. While changing his clothes he found that a pearl was hidden in his shoes. The pearl was then thrown towards the fairy; she picked it up and disappeared. A similar story is related about Nanga Parbat, a mountain on the west of Astor.

Shangali Ween.

At about two miles east of Danyore, a village about three miles east of Gilgit, there is seen on the northern side of the road leading to the Bagrot Valley a small piece of ground about one yard square surrounded by walls about three feet high. This place is called "Shangali Ween" (place of putting chain). It is said that there used to be a golden chain hanging in the air without any support. In ancient times, when any case was to be decided on oath, both the parties were carried there and each of them addressed the chain in the following manner: "O *Sojio Shangali* (sacred chain), whoever of us is sinful please accuse him by striking his neck; and the chain used miraculously to whirl round the neck of the man who was guilty. The man was then convicted and punished by the authorities according to law. No chain is now found at the spot, and the people relate an interesting story about its disappearance. They say that two men of the Bagrot Valley were once coming together to Gilgit: one of them had brought some gold with him which the other succeeded in stealing. Making a small hole in his stick, he put the gold secretly into it. The men, after a long quarrel about the lost gold, decided that the case should be settled by the Shangali. When they were entering the place, the guilty man gave his stick which contained the gold to the other, and they both began to beg before the Shangali, asking that, whichever of them had gold in his possession, he might be struck by the Shangali. The Shangali, who was aware of the trick, was much enraged at this attempt to deceive, and, considering itself offended, at once disappeared for ever without settling their case. The loser of gold was now very angry, and in a fit of his anger struck the stick on the walls of the enclosure. The stick broke and the lost gold was disclosed.

Nong and Chakrot Bari.

Near Laos village in the Astor district there is a small fountain called Nong. The people consider it a sacred one and offer sacrifices at the place for the fulfilment of their wants. If owing to drought a loss of their crops is expected, or if for any other reason heavy rain is required, the people used to throw some unclean thing into the spring, such as the bone of a dog; it then began to rain, and continued until the object was taken out. Owing to the belief that the spring was sacred and, moreover, able

to inflict harm upon the people, they themselves did not dare to put an unclean thing into the spring; and therefore on such occasions a foreigner was employed to perform this act, receiving as remuneration a large quantity of grain collected for the purpose at the rate of two seers per house. After receiving this grain he threw some unclean thing into the spring; and took it out when the rain was no more required. There are two other similar springs: one in the Bagrot Valley, called Chakrot Bari; and the other near the Tarshing village in the Astor District, called Komachon uts.

"Rashoo ai Yudaini."

(The Fairies' Drum of Rashoo.)

The Doms of Bulchhi, a village in the Bagrot Valley, have still in their possession a small drum about one foot in diameter and three feet in circumference. This is called "Rashoo ai Yudaini." It was once carefully kept in a handsome cover by Rashoo, a Rono Wazir of Gilgit, who had ruled for the chief in that place. It is said, that whenever Rashoo intended to advance against any chief, the Yudaini was brought and kept before him. If it made a noise, without having been beaten by anybody, Rashoo believed it an omen of success. But if it were silent, Rashoo postponed his expedition.

The Hoof Mark of a Horse.

Between Edgah and Balan villages in the Astore district there are seen on a rock near the old road which faces the Phina village, a few small flags. It is said that at this place there is a mark on a stone of the hoof of a horse. The story of the hoof-print is this—The place was once haunted by a giantess, who was a bitter enemy of mankind, and had become the terror of the people. The people wished to get rid of her. By the providence of God, one day a venerable Darwesh—some say that the Darwesh was no one else but Hazrat Khizar himself—halted on the river-bank close to the foot of the Phina village, and saw the giantess across the stream. He flung himself on his horse and, spurring it vigorously, came upon the giantess with the speed of lightning. She had no alternative left but to take to her heels, which she did, leaving the noise of her shrieks behind, and was never seen again. The horse had come upon it with such a vigour that the stone gave way under its weight, and there burst forth from the stone a spring of cool, fresh water. Though there exists no trace of it now, it is still looked upon as a sacred place, and the people from far and near gather together annually to celebrate the event by killing a sheep, feasting upon it, and making merry.

XI.

The Foot of Malik the Rá of Gilgit.[1]

It is said that one of the feet of Malik, an ancient Rá of Gilgit, was naturally formed like the hoof of an ass. He took great care to conceal this defect from all people. One of his old servants had, however, a knowledge of the mystery; but he was strictly forbidden by the Rá to disclose the secret. The servant kept it from becoming known

[1] [Cf. the Greek story of Midas and his ears, and of how their asinine form was revealed to the people.—Ed.]

for a long time, in fear lest his life should be in danger should he breathe but a single word. But his belly began to swell day by day, owing to his keeping the knowledge to himself. He was at a loss to know how to cure his disease without betraying the secret, but at last thought of a remedy, and went up a lofty mountain to search out a lonely place where there would be no shepherds or other men. There he dug a small hole sufficiently large to hold his head. Seeing that nobody was anywhere near, he put his head into the hole and began to cry as loud as possible, in order to let out the secret from his belly, that one of the feet of Malik was like the hoof of an ass. He continued repeating the words till he felt quite cured, and then returned to Gilgit. A couple of *chili* trees are said to have grown up after a short time on the spot where he had uttered the words. A certain shepherd happened to go there and by chance cut a branch of one of the trees for the purpose of making a flute out of the wood. He brought it home and fashioned it into an instrument. But when the flute was blown it always uttered the sentence which the servant of the Rá had uttered on the mountain. The news soon got about, and the people were so surprised to hear it that numbers came from a far distance to satisfy their curiosity by seeing and hearing such a miraculous flute. The Rá himself even heard the news, to his perplexity and sorrow. He called for his servant to question him, and to punish him if there had been any fault on his part. But the man was unable to reply until he had traced the origin of the wood of which the flute was made. Having done this, he ascertained that the miraculous power of the flute was due to him. Begging pardon of the chief, he related to him the story, to the latter's great amusement, and thus saved his life.

XII.

The Legend of Shri Badat the Man-Eater.

Once upon a time there lived a chief at Gilgit named Shri Badat. He was in the habit of obtaining a sheep daily from his subjects. One day, when eating his dinner, he was much surprised to find that the meat was more tasty than before. He ordered his *kulchin* (darogha of the kitchen) to find out where the sheep was brought from. The *kotwal* concerned was sent for, and he stated that he had got this sheep from a woman of the Barmas village. She was ordered to appear at once. The woman who did not know the reason of this sudden call, was much frightened at being brought before the chief, whom she had never seen before. Trembling as she approached the court, she was much relieved on hearing Shri Badat's questions and cheerily replied as follows: "Peace be ever upon thee, O thou great King of Gilgit! The mother of this sheep had died a few days after its birth, and the lamb being very beautiful was very much admired by me. Thinking it a hardship to lose the lamb as well as the ewe, I fed it with my own milk until it was able to graze. A few days ago the same lamb was presented to your Highness." Shri Badat was very pleased on hearing this story, and gave the woman a liberal reward and dismissed her. Sitting alone, he began to think over the cause of the tastiness of the meat. He argued that when the meat of a lamb which had for a short time only sucked the human breast, was so excellent to the taste, the meat of the human being who is

always nourished by human milk would certainly be better than that of an animal. Coming to this conclusion, he gave orders that a tax of human children should be levied in future instead of sheep, and that their meat should always be served at his dinner. In this way he became a man-eater.

The Capture of Gilgit by Skardu Chiefs; the Soul of Shri Badat and the "Talino" and "Nisalo" Ceremonies.

In the reign of Shri Badat, a Buddhist Chief of Gilgit, three princes named Khisrau, Jamshed and Shamsher, the sons of Azur, a chief of Skardu, are said to have arrived at Danyore, a village situated about four miles east of Gilgit at the junction of the Gilgit and Hunza rivers. They were the first Muhammadan chiefs who started from Skardu to conquer and subdue the hill States of Hunza, Nagar and Gilgit. They had succeeded in capturing the two former States, and it was now the turn of Gilgit to fall into their hands. The people relate an interesting story about their arrival and their obtaining possession of the fertile tract of Gilgit proper. They say the princes were born of fairies and arrived at Danyore flying on wings from the lofty mountains where the fairies live. One day they saw a wild cow grazing on the "Danyore Khoh," a hill at about two miles distant from the place they were sitting. The elder brothers, Khisrau and Jamshed, requested the younger, Shamsher, to shoot the cow with his bow and arrow. Shamsher out of respect for his elder brothers said that he could not shoot first, but he was overruled and compelled to carry out the request. He then took up his bow and arrow and aiming at the cow shot her with such dexterity that her body was pierced by the arrow. The Danyore people were much surprised to see this skill of Shamsher, and ran away noisily to the hill to fetch the body. They found the animal lying half-dead of the wound caused by the arrow, which had penetrated the heart. The cow was brought to the village and placed before the princes, who ordered the liver to be roasted and served. When the meat was brought in, Khisrau and Jamshed remarked that it would be seemly on Shamsher's part to eat it himself, as it was the result of his skill. In vain did Shamsher try to make them join. He was thus obliged to eat it himself, but he had not taken more than three or four slices, when both his elder brothers took flight into the air and disappeared. Shamsher also tried his utmost to follow his brothers, but the meat just taken by him had worked such an effect on his body that he could not even rise a little above the surface of the earth, and reproaching himself with the deed which had caused his separation from his beloved but faithless brothers, he remained content to pass his future days in the village. The inhabitants of Danyore who had seen his marvellous act, considered him, on account of his being "fairy-born," of a race superior to their own, and always showed him much respect and obedience. After a lapse of some months he related to a large gathering of the villagers around him, that he had just seen a big markhor frolicking hither and thither on the Hapukor Mountain (above Naupur and Naikoo villages), and that he wished to shoot it at once with his arrow. They were very surprised to know that he had seen a markhor from a distance of more than four miles, and they would not have believed him had they not already experienced his miraculous power of sight on the occasion of his

shooting the cow, and had they not believed him to be fairy-born. They all therefore expressed their pleasure at his wish to shoot the markhor. Shamsher then aimed at his victim, and, shooting the arrow with all his might, cried out that he had killed the markhor, to the great joy of the villagers, many of whom expressed their wish to accompany him in fetching the dead animal. They went up the hill *viâ* the Naupur stream and found the markhor lying on the self-same spot that had been pointed out by Shamsher, and they all heartily congratulated him on his success. The sun was high and the day hot, and the men, who were tired, searched for and found a spring well shaded by trees. There they slept for a while Miyo Khāi Soni, a daughter of Shri Badat, used also to live on the same mountain near the spring, in order to pass the hot summer days. A maid-servant of hers happened to come there to fetch water, and was surprised to find that some strangers were sleeping near the spring. She returned at once and reported the matter to her mistress, who became very angry and ordered all her maid-servants to capture and bring them before her. This was done. Shamsher was a youth of handsome and comely appearance, and as soon as the princess saw him her rage fled, sothat she forgot every angry word she had thought of as befitting the occasion, and very politely and amiably asked after his health and the cause of his coming up the mountain. She was so much struck and pleased with his refined behaviour and elegant manners that she at once exclaimed

> "I might call thee a thing divine: for nothing natural
> I ever saw so noble."

Shamsher asked for her permission to leave and go down the hill, but this was refused and the party was amiably invited to stay the night. They devoted much of their time to conversation, and Miyo Khāi modestly showed her preference by listening to the stories of the prince's adventures and deeds of valour from his own lips. At last he gained a tender place in her heart. The moment was a critical one for Shamsher, who thanked her courteously for her favourable consideration and told her that the idea of her giving her hand to a foreigner like himself would prove a sorrow to all concerned when the news reached Shri Badat. These words were hard to bear, and the soft-hearted princess began to weep and fell down at his feet. This action of Miyo Khāi produced a sudden effect on the heart of Shamsher, who feeling for her unbearable grief, lifted her up from his feet and gently consented to their union, in spite of the fate that might await them at her father's hand. The princess was pleased beyond expression, and her subsequent devotion is a proof of her feelings. She ordered all her maid-servants to appear, and explained to them her desire. She also informed them how dear she was to Shri Badat and that this would cause him to listen to her appeal. But if any of them should tell the news, she must consider her life as at an end, and her property confiscated. They all trembled at the words of their mistress, and with due respect expressed themselves to the effect that her happiness was their heartfelt desire, and that they were extremely glad to know of this selection; and they promised that nobody else should hear a word about this engagement from their mouths. The marriage ceremonies were secretly performed on the same night, and Miyo Khāi was, some people say, named Sakina, but according to others her name became Nur Bukht. Next morning Shamsher allowed his Danyori

companions to go down to their village, with instructions to keep what they had seen a secret. Shamsher became filled with the desire to make himself ruler of Gilgit, and began to instigate his wife to murder her father and to raise the Danyori people secretly against him. Sakina, whose passions had mastered her sense of duty, prepared to take her father's life for the sake of her beloved stranger. Shri Badat, being the descendant of giants, had no fear of being attacked by sword or arrow, as these weapons had no effect on his body, and no one knew what his soul was made of. The first thing therefore for Shamsher to inquire was the secret of his soul. So, on a certain day, in order to gratify this desire, and to prove the trust his wife had in him, he prophesied that as soon as the leaves of a certain tree should decay and become yellow, she should no more see her father. It happened that the leaves of the tree decayed much earlier than usual, and Sakina, thinking that it meant the death of her father, went down the hill lamenting; but she was much surprised to find that he was still alive. She related to her father that a few days ago a certain *fakir* had gone up the hill and had foretold that as soon as the leaves of a certain tree should turn yellow she should unfortunately find herself an orphan. On this day the leaves of the tree had turned yellow, and, considering this an ill-omen, her filial love had caused her to present herself at his feet, but she thanked God it was not so, and that the *fakir's* statement had proved false. Shri Badat said in reply, "O my affectionate daughter, nobody in the world can kill me, as no one knows of what my soul is made. How can it be injured until someone knows its nature? It is beyond a man's power to inflict harm on my body." Sakina said that her happiness depended on his life and safety. As she was dearest to him in the world, he should have no hesitation in informing her of the secret of his soul. She would, moreover, be able to forestall any unfavourable omens, and to show her filial love by devoting her life to the safety of her kind father. He used much *finesse* in turning the topic of conversation, and made many pretences in order to keep his secret from his daughter, in spite of her pertinacity. His paternal love at last compelled him to grant her wishes, and he informed her that his soul was made of *ghi* (butter), a substance which cannot be melted without much heat; and that whenever she should see a large fire burning in or around his fort, she must consider it the last day of his life. But he did not know that he was putting his life in danger by confiding in a weak-hearted woman, who was being used to take his life. Miyo Khāi passed a few days with her father and then went up to her hill-abode, where she found her beloved Shamsher anxiously awaiting her arrival. To him she related her conversation with Shri Badat. He was extremely glad to receive this description of Shri Badat's soul, as he was prepared to spare no pains in taking his life. The information acquired now led him to think of the speedy fulfilment of his hopes. He is said to have sent for his Danyori companions secretly, who had accompanied him to the hill, and whose loyalty was unquestionable, since they believed him to be born of a fairy. The cruelty of Shri Badat knew no bounds, so that he had earned the title of man-eater; and his subjects were already looking for an opportunity of getting rid of the tyrant in order to save the lives of their innocent children. In a few words therefore Shamsher won the Danyore men's approval of the plot against the life of Shri Badat, adding that he was now master of the secret of their ruler's

soul. They agreed to lend a helping hand to Shamsher and to raise the subjects secretly against their merciless chief. On finding that the majority of the people had joined him, Shamsher fixed a date for accomplishing the deed by burning a large fire late at night round the fort of Shri Badat. A few days before the appointed day, he sent down Sakina to her father with instructions to keep the secret, while he himself went down to Danyore village to make his preparations. At about 3 A.M. on the night appointed for the purpose, all the people turned out of their homes with torches in their hands and a quantity of wood. Shri Badat's fort was situated about 200 yards east of the present Gilgit polo-ground on the site of the houses of the Bāirai family. The people were still some way from the fort when Shri Badat's spirit began to feel uneasy. He therefore asked his daughter to go out and see what was the cause of his restlessness. This undutiful and faithless woman, who had a perfect knowledge of the conspiracy, went out and returned after some delay, in order to let the people come closer, and said that there was nothing to be feared outside the fort. But Shri Badat's increasing uneasiness brought him out of his room. He found himself in a very awkward position, having by this time been surrounded by the enemy, who had succeeded in planting large fires round the fort. In this predicament he had no time to consider the necessity of punishing his wicked daughter, but at once jumped up in the air and took wing towards Chotur Khan, a snowy tract in the Ishkoman Valley. He is said to have rested at Yashpur (a deserted village near about 12 miles west of Gilgit) Hinzil, where he requested somebody to bring him a cup of cold water. The village had a plentiful produce of grapes, and the inhabitants used to make wine from them. The man therefore brought out a cup of wine to Shri Badat, who refused, saying angrily that, seeing that he had come there after having escaped from a fire which had done great injury to his soul, it was improper for he man to give him wine instead of cold water, which was what he had asked for. But none would bring him water, and, being thus dissatisfied with the treatment of the villagers, he cursed the place, saying that it would be totally ruined and laid waste, so as to produce no grapes again. It happened in the following year that the glacier which afforded a supply of water for the village melted away, thus effectually destroying the village cultivation forever. From Yashpur Shri Badat went to Chotur Khan and hid himself there under a big glacier, where he is still said to have his abode. The people have a firm belief that he will re-appear at Gilgit to renew his rule over them with redoubled fury. Being afraid of his regaining the kingdom, the people are in the habit of burning big fires in their homes throughout the night of the anniversary in November on which Shri Badat was driven from Gilgit, in order to keep away his ghost if it return. On this night no one ventures to sleep, but to while away the time they are in the habit of dancing and singing round the big fires. This ceremony is called "Talino." There is, however, a family of Kulchins (the kitchen servants of Shri Badat) who do not take part in the performance of the ceremony; for they are still loyal and faithful to their master, and are still desirous of his returning to his own. This is the only family now residing at Gilgit who are well-wishers of Shri Badat. It is curious that they should have escaped injury at the hands of the opposite party.

On the afternoon of the following day each family kills five goats for every house, as a token of their happiness at being free for one more year from the re-arrival of the cruel chief. The meat is dried and kept to be cooked during the following months. It is said that the meat of the goats killed on this day does not turn bad, even if kept for years. This ceremony is called by them " Nisalo."

A Story of the Katchata family and "Chili" Ceremony.

Once upon a time there resided at Gilgit a wealthy family of Katchatas. This family lived alone in a separate fort on the site of the fruit orchard in which Mr. Hayward is buried. The family grew so strong that it kept the chief afraid of its power. The Rá, who always used to keep a watchful eye over this clan, was so frightened by their doings that, being unable to fight them openly in the day-time, he thought at last of making a sudden night attack on the sleeping warriors. The proposed attack was so successfully carried out by the Rá that he left none alive in the fort except a pregnant woman, who managed to escape by a small window and took flight up the Kargah Valley, in order to seek a refuge in a secluded village of Darel. There she soon bore a son. None of the family survived to cultivate their lands, which were lying waste. The Rá, however, took this task upon himself, and wheat was sown over the land by his followers. But he was much vexed when he saw the whole crop turned black and become unfit for food, and that his labour was fruitless. For the five successive years the same state of things continued, and the Rá, being weary of cultivating the lands any longer, at last ordered the Danyals to explain the real cause of this misfortune. According to their usual custom the Danyals worked themselves into a state of frenzy by burning the leaves of the *chili*, and then, putting their ears for a short time upon the drums to listen to what these had to say, sung a song to the following effect :—

" The fertility, prosperity and abundance of Gilgit were due to the happiness and the blessed hands of the Katchata clan, and because they were extremely oppressed and tyrannised over by the Rá, the destruction of the land resulted and will continue until a man of the same family is brought here to plough the lands with his own oxen, and to put in the seed in the Rá's cloak. A few handfuls must be scattered by the Rá himself, while the remainder is sown by the Katchata or his followers in these fields. The other inhabitants must not precede the Katchata in ploughing and cultivating their lands." On this the chief gave orders to the assembly to bring a man of that clan, from any part of the country in which he could be found, and promised that a good reward would be given to the man who succeeded in finding him. A number of the Rá's followers at once started in all directions in the hope of gaining the reward. The man who had set out for Darel and Tangir came to know, to his great delight, that a woman of the family had at the time of the massacre escaped towards Darel, where she had since borne a son. He sought out her dwelling, and promising her safety as well as a good reward, obtained her consent to accompany him to Gilgit. He thus gained the reward, while she was welcomed by all the people. The Rá then assisted in the sowing of the fields according to the advice of the Danyals, and with the returning happiness of

the Katchata the crops were that year excellent. The boy was afterwards married and is said to have had four sons. Three of them were sent to the Rás of Hunza, Nagar and Yasin, at their request, to reside in their respective States as beings of divine nature, while one remained at Gilgit. From that time it has become a custom that the Rá's lands are ploughed first by the Katchata clan, and that afterwards the other people commence this operation. As soon as the ploughing is finished and the time to sow the seed has arrived, the Rá gives a big feast to the inhabitants, who all assemble at his house and make merry, with the usual dancing, singing and playing upon flutes and drums. Some flour is then rubbed on a Katchata's face, and his long locks are let loose. Moreover, he is made to bellow and go like an ox in front of all the party towards the Rá's fields, where some food is given him by the Rá. This he catches and eats like a beast. Next begins the sowing operation by the Katchata's putting some handfuls of seed in the Rá's skirt, who mixing with it a small amount of gold dust, scatters it with his own hands in one of the fields. The rest of the seed is scattered by the Katchata, and then by all the other people in their fields. On this day, which is called "Chili," the Katchata receives from the Rá a reward of one maund of flour, 5 seers of *ghi*, one turban and one cloak.

The Murder of Wazir Thusho.

There lived a wealthy and influential man named Thusho at Gulapur in the Punyal District, during the time of Badshah, who was the ruler of Yasin. He had made for himself a golden plough, and used to keep many hidden treasures in safe places in the adjacent *nullahs*. These are said to be still buried, but the places are unknown. Badshah, the Mehtar of Yasin, once sent him a *khillat*. When the messengers reached Gulapur, Thusho was ploughing in a field on the side of the Yasin road. The men, who did not know Thusho asked him the whereabouts of the house of Wazir Thusho. He pointed out his own house to them, showing them a round-about way to it, while he himself went there direct by a short cut and arrived before them. In the interval he changed his clothes and then met the messengers, who presented him with the *khillat*. On receiving this, Thusho *salaamed* towards his fort called "Boori Thoki." (Its ruins are still found at Gulapur.) By so doing he meant that his fort was so strong that the Mehtars of Yasin sent him presents. The messengers were soon dismissed by him, and they related this story to their chief on their return to Yasin. The chief was much angered by Thusho's bearing, and advanced against him with a large force. Thusho sent out his younger brother, Khushhal Beg, to check his advance, but he had already reached Gulapur. In the fighting which ensued, Khushhal Beg cut his way through the opposite forces and came face to face with Badshah, who made three cuts with a sword at Khushhal Beg, which the latter dexterously parried with his shield, and cried out that it was now his turn of attack. The Mehtar enquired as to which of them was after all to turn tail, to which Khushhal Beg made reply that Badshah was a king of hawks, Khushhal Beg of fowls only, and that he must at last give away. The fighting was then stopped, and the Mehtar being considered victorious, returned to Yasin. Thusho was very angry that his brother Khushhal Beg had not killed Badshah when such a favourable opportunity offered itself; so he made him a prisoner in the fort of Chatur Khan in Ishkoman. Hearing this news, Badshah again led his forces against

Thusho. The Mehtar captured Hakim Beg, the son of Thusho, at Gakuch and brought him along with great ceremony and treated him very kindly, making him many presents in order to show him his magnanimity. Reaching Gulapur, the Mehtar sent Hakim Beg to his father Thushoo with a message of surrender; but Thusho was still more enraged at such a message from the lips of his own son, whom he blamed for bringing with him an army against his father; and (taking up a matchlock) was ready to commence fighting. Hakim Beg who had seen Badshah's might, however, persuaded him from doing so, and forced him to accept allegiance. Thusho yielded to this, and in the midst of a large crowd of the headmen and his followers, came out of his fort to *salaam* to Badshah. A dance was then held by the Mehtar, and Thusho ordered to show his obedience by dancing. This he did, but instead of *salaaming* to Badshah in the course of the dance, he bowed towards his own fort. The Mehtar was filled with anger and ordered his servants to behead Thusho with his 12 sons at the same spot. They were cruelly murdered and buried all together. Their grave, which is called "Thusho ai Bombat," is about five yards square and nine feet high, having the form of a small vault in which they are buried. The roof has now fallen in owing to a fig-tree having grown out of the vault. Khhushal Beg, the brother of Thusho, was afterwards recalled by Badshah from Chatur Khan and made Wazir of Gulapur.

The advance of Skardu Chiefs against Chitral and the Devastation of the Chemogah Village.

When Sher Shah, Ali Shah, Shah Murad, and Shah Sultan, the princes of Skardu, advanced towards Chitral, they halted on their way for a couple of days at Chemogah, a village about 19 miles east of Gilgit. Here they made merry, played polo, and tried to overawe the people by the horrible noise of about a score of drums. All the inhabitants of the village came to pay their respects, except one wealthy man of Chemogah. Some of his enemies called his absence to notice. He was therefore brought by the Chiefs' men and asked to explain the cause of his delay in paying his respects. He stated that he had gone to his goat-pen, and as he had left the kids and lambs loose to suck milk, he could not, owing to their noise, hear of the arrival of the princes or the sound of their drums. The chiefs turned very angry, and to ascertain the truth of his statement, they deputed some of their servants to go into the man's pen and to listen for the sound of the drums, which would be beaten afterwards. They returned, saying that the noise of his flocks was sufficiently overpowering to overcome the sound of the drums. The chiefs were astonished to hear this; but still they did not relent, and they decided that the lands of Chemogah should be laid waste in order to prevent any of the people becoming rich enough to admit of a similar display of arrogance and disrespect. For this purpose the chiefs gave orders that twelve bags of quicksilver should be thrown into the source of the Chemogah stream, in order that thequick silver, because of its weight, would cause the level of the stream to be depressed and prevent water from being obtained for the irrigation of the land; and so it came about that Chemogah village and fields were laid waste.

Their army is said to have arrived at Gilgit by both the Haramosh and the Astore routes. When both the divisions joined at Hinzil, a village about seven miles north-west of Gilgit, the

princes thought of counting their men for the purpose of ascertaining their losses, as they were proceeding against a distant and formidable foe, who was likely to inflict a further loss on their numbers. Such a large force was never seen before in the country, and it was not an easy task for the chiefs to have them counted in a day. The simplest way therefore was adopted by the chiefs, *viz.*, to order their men to throw stones together in a heap at one stone per man, and to take out one stone from the same heap on their return, in order that by this means they might be able to deduct the casualties. There is a heap of stones at Hinzil, which, however, is more probably the ruins of a Bhuddist tope.

They conquered the country as far as Chitral, where they are said to have placed a big stone under a large *chinar* tree.

The *dák* arrangements are said to be so excellent that the chiefs used to eat dinner cooked at Skardu, which reached them warm at a distance of about 400 miles.

The following song is still preserved at Gilgit in memory of these Chiefs :—

"(1) Ala, Sher Shah, Ali Shah, Murad trai draro, Khiri nile sine aje Kaltor ganaige.

(2) Ala pote, Makpoon ai pote, trai draro Khiri nile sine aje Kaltor ganaige.

(3) Ala, Sher Shah, Ali Shah, Murad, trai draro, Khiri hole sarega lam guti ganaige.

(4) Ala, pote Makpoon ai pote, trai draro Khiri hole sarega lam guti ganaige.

(5) Ala, Sher Shah, Ali Shah, Murad, trai draro, Hathoo Khān Khur bai Khiri Hosi ga Yur phiraigai.

(6) Ala, pote, Makpoon ai pote, trai draro, Hathoo Khān Khur bai Khiri Hosi ga Yur phiraigai.

(7) Ala, Sher Shah, Ali Shah, Murad, trai draro, Chemogar ai cel phote, sang brang tharaigai.

(8) Ala, pote, Makpoon ai pote, trai draro, Chemogar ai cel phote, sang brang tharaigai.

(9) Ala, Sher Shah, Ali Shah, Murad, trai draro, hune nili Chili ai Khiri devai notaige.

(10) Ala, pote, Makpoon ai pote trai draro, hune nili Chili ai Khiri devai notaige.

(11) Ala, Sher Shah, Ali Shah, Murad, trai draro, hune nile Chili ai Khiri dum dolo bashaigai.

(12) Ala, poti, Makpoon ai pote trai draro, hune nili Chili ai Khiri dum dolo bashaigai.

(13) Ala, Sher Shah, Ali Shah, Murad, trai draro, Khiri Brook ga Balim photai, Khiri roni ronal tharaigai.

(14) Ala, pote Makpoon ai pote trai draro, Khiri Brook ga Balim photai, Khiri roni ronal tharaigai.

(15) Ala, Sher Shah, Ali Shah, Murad, trai draro, Khiri Brook ga Balim phota Khiri chai ghinigai.

(16) Ala, pote, Makpoon ai pote, trai draro, Khiri Brook ga Balim phōtai Khiri chai ghinigai.

(17) Ala, Sher Shah, Ali Shah, Murad, trai draro, Chtrachtral aje *bat bai*, Khiri oordome thap tharaigai.

(18) Ala, pote, Makpoon ai pote, trai draro, chtrachtral aje *bat bai*, Khiri oordome thap tharaigai.

(19) Ala, Sher Shah, Ali Shah, Murad, trai draro, Shah Katur nayáta, mute chhal bagaigai.

(20) Ala, pote, Makpoon ai pote, trai draro, Shah Katur nayata, mute chhal bagaigai.

(21) Ala, Sher Shah, Ali Shah, Murad, trai draro, Gilit brangsa ganen, Yasin ar bola degai.

(22) Ala, pote, Makpoon ai pote, trai draro, Gilit brangsa ganen, Yasin ar bola degai.

(23 Ala, Sher Shah, Ali Shah, Murad, trai draro, chimar ai chhai photai, dare bat othaigai.

(24) Ala, pote, Makpoon ai pote, trai draro, chimar ai chhai photai, dare bat othaigai."

TRANSLATION.

(1) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have made a bridge over the blue river below.

(2) O (countrymen), the sons, the sons of Makpoon, three brothers, have made a bridge over the blue river below.

(3) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have pitched their shining tents beside the rippling pond below.

(4) O (countrymen), the sons, the sons of Makpoon, three brothers, have pitched their shining tents beside the rippling pond below.

(5) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have made a *kul* (watercourse) below Hathu mountain (between Ramghat and Doyan) and have worked a water-mill with it at Hosi (a place near Ramghat).

(6) O (countrymen), the sons, the sons of Makpoon three brothers, have made a *kul* below Hathu mountain (between Ramghat and Doyan) and have worked a water-mill with it at Hosi (a place near Ramghat).

(7) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have broken the *nullah* of Chemogar (Chemogah) and have made the land barren.

(8) O (countrymen), the sons, the sons of Makpoon, three brothers, have broken the *nullah* of Chemogar (Chemogah) and have made the land barren.

(9) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have held a dance of giants beneath that high, green *chili* tree.

(10) O (countrymen), the sons, the sons of Makpoon, three brothers, have held a dance of giants beneath that high green *chili* tree.

(11) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, are having their drums beaten beneath that high, green *chili* tree.

(12) O (countrymen), the sons, the sons of Makpoon, three brothers, are having their drums beaten beneath that high, green *chili* tree.

(13) O (countrymen), Sher Shah, Ail Shah, and Murad, three brothers, have conquered Brook and Balim, and the women of the places are weeping.

(14) O (countrymen), the sons, the sons of Makpoon, three brothers, have conquered Brook and Balim, and the women of the places are weeping.

(15) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have seized Brook and Balim and have brought here a number of the girls of these places.

(16) O (countrymen), the sons, the sons of Makpoon, three brothers, have seized Brook and Balim and have brought here a number of the girls of those places.

(17) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have placed a stone in Chitral and have upset the land.

(18) O (countrymen), the sons, the sons of Makpoon, three brothers, have placed a stone in Chitral and have upset the land.

(19) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have defamed the name of Shah Katur (ruler of Chitral) and have distributed many goats.

(20) O (countrymen), the sons, the sons of Makpoon, three brothers, have defamed the name of Shah Katur (ruler of Chitral) and have distributed many goats.

(21) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have halted at Gilgit, and played polo at Yasin.

(22) O (countrymen), the sons, the sons of Makpoon, three brothers, have halted at Gilgit, and played polo at Yasin.

(23) O (countrymen), Sher Shah, Ali Shah, and Murad, three brothers, have broken the iron lock and left the doors open.

(24) O (countrymen), the sons, the sons of Makpoon, three brothers, have broken the iron lock and left the doors opened.

Trakhan's being Thrown into the River.

Tra-Trakhan, an ancient Rá of Gilgit, is said to have married a woman of a wealthy family of Darel. The Rá was very fond of playing polo and used to go to Darel weekly for the purpose of playing his favourite game with the seven brothers of his wife. One game was played on the condition that whichever party lost the game should be murdered. After a long and skilful game the Rá was winner, and according to the conditions of the agreement he executed all his brothers-in-law. The Soni (queen), who was much disturbed on hearing the sad news of her brothers' death, determined to revenge them and mixed arsenic in her husband's food. So he died, and she took the reins of government into her own hands. After a lapse of a month she gave birth to a son who was named Trakhan ; but, his mother, who was deeply grieved on account of her brothers' fate, did not like to see the son of a murderer, and cruelly locked him up in a wooden box, which she secretly threw into the river. The box is said to have been carried away by the current as far as Hodar, a village in the Chilas District, where it was seen by two brothers of poor means, who were collecting wood on the river bank. Noticing that

the box was floating quite close to the bank, and thinking that it might contain some treasure, one of them jumped into the river and brought it ashore. Thinking it better to open the box in their house, they concealed it in a bundle of wood and carried it home. There they opened it; but to their and their mother's great surprise, a lovely infant was found in it still alive. Their mother brought up this outcast child with every care. The family was in straitened circumstances, but after the arrival of the child they grew richer and richer, and they considered his arrival the cause of their prosperity. When the infant was six years of age he began to talk freely with his foster mother, who now related to him the story of his appearance among them, and their becoming more prosperous since his arrival. When Trakhan reached his twelfth year he wished to see the Gilgit district, of which he had heard a great deal, specially in respect of its fertility. So he set out for the place accompanied by his foster brothers. He stayed for a few days on Harali, a hill to the north of Gilgit which has a flat stretch of land called "Baldas" on its top. This was cultivated in those days, as the water-supply (which has now dried up) was sufficient, and there existed a small village on the spot.

The mother of Trakhan was still the ruler of Gilgit, but had then fallen dangerously ill. The people were therefore in search of another competent Rá from any of the neighbouring districts, as there was no one left of the ruling family of Gilgit. One early morning when the village cocks began to crow, the birds, instead of the usual noise of *Kukroonkoon*, uttered the following words, to the great astonishment and delight of the people, "*Beldas tham bayi*" (there is a king at Baldas). Men were at once sent thence to bring down any stranger they happened to find. The three brothers were seen by them and captured and forcibly carried before the queen. Trakhan was handsome and stately in appearance, and the queen therefore addressed him, and asked him to relate the reason of his undertaking this journey, and inquired of his country and his birth. He related all his history at full length, and she found, to her extreme surprise and joy, that the boy then speaking was her own son, whom she had so mercilessly thrown into the river, when her mind was disturbed by the murder of her brothers. She then embraced Trakhan and proclaimed him the rightful ruler and heir to the chiefship of Gilgit.

Trakhan and a Crow.

On a certain day, it is said, Trakhan, the strongest and the proudest Rá of Gilgit, was sitting on the banks of a water-channel in the midst of an assembly of his followers. There he told them that there was no one in the world equal to him in bravery and strength. While he was thus boasting, a crow happened to pass over his head and soiled him. He turned very angry at the impudent action of the crow, and ordered his followers to catch it at once by any means possible. The bird having been pursued by so many men, flew away towards the village of Manawar, and from thence towards Danyore across the Gilgit river; but seeing that the gathering did not quit its pursuit, it escaped towards the Danyore Nullah. There a woman was washing the flesh of a markhor. The pursuers took from her a piece or two of the flesh, and by the help of this meat they succeeded in seizing the poor bird. It was brought before their Rá, who indignantly asked the bird to explain the cause of its conduct towards a king of Gilgit.

The crow, it is said, replied saying, " The boast made by you on a spot I know well to be the grave of a man far more powerful than you, did not please me. A ring of the same warrior is also buried at this spot, and it will show you how strong he was in comparison with you." Trakhan gave orders to dig up the ground; these were at once obeyed, and a finger ring was found in the grave so wide that Trakhan could pass it over his body. A delicate feast of meat was then prepared for the crow, and afterwards the bird was set free.

Su Malik's Bravery and a "Tallufar."[1]

Su Malik, an ancient Rá of Gilgit, is said to have presented a dog as a dowry to his sister, who was married to Farmaish, a ruler of Yasin. When Taj Mughal, the chief of Badakhshan, arrived at Darkot for the purpose of attacking Gilgit, the Rá of which place had refused allegiance to Badakshan and stopped sending the tribute of Chogas, Farmaish wrote a letter to Su Malik, and enclosing it in the collar of the dog, ordered it to start at once for Gilgit. The dog arrived here within five hours, travelling by night. Su Malik got the letter and started on the same day with a strong force to check the enemy's advance, and to assist Farmaish against the Mongols invading Yasin. Both the forces reached Yasin on the same day and encamped on the opposite sides of the river bank. The Mongols, who had come by short and slow marches, sent a message to Su Malik to commence the fighting; but the Gilgit men were too weary to fight owing to their previous haste, and so Su Malik sent a reply requesting them to postpone the combat until the next day. However, he asked the Mongols that if there were any strong athletic men in their army, they should show him their skill. Taj Mughal ordered one of his champions to show his prowess to Su Malik. The man caught hold of a large goat and threw her across the river, with such strength that the goat fell in the Sarginis (Gilgitis) camp near Su Malik. On this Su Malik, who was very strong, and had reached his full muscular development, took up a large and heavy log of wood and threw it in turn towards the Mongols with such force that, though the log was much heavier than the goat, it fell into the Mongol camp across the river. Seeing this prowess on the part of Su Malik, the Mongols lost their courage, and giving up the idea of any further fighting, they retreated on the same night. By dawn Su Malik, seeing no enemies in their camp, pursued them rapidly and caught them at Darkot, where Su Malik, having tumbled from his pony, fell into his enemies' hands and was carried by them as a prisoner to Badakhshan, without its being known to them that he was the Rá of Gilgit. There he was given the work of bringing wood for the Mir's kitchen. On a certain day when he was collecting wood he saw the head of a dead animal and began to weep over it. His companions asked him to explain the reason of his grief, but he made reply to none until the Mir of Badakhshan heard the news and sent for him to know the reason of his weeping. He related to the Mir that his grief was only because the head was that of an excellent *tullufar* horse. Taj Mughal, seeing that the man had a good knowledge of animals, appointed him as a caretaker of his stable, and asked him to see if there was any *tullufar* animal in the stable. Su Malik saw all the animals and came to the Mir to say that a mare was in foal with a *tullufar*, and that the young animal should be

[1] The *tullufar* is said to be the offspring of a mule and a mare. It is said to be very swift and strong.

taken out by opening the belly of the mare, as otherwise she would die in a few days and the colt would be lost as well as the mother. The Mir gave him permission to cut the mare's belly. Thus obtaining the Mir's consent, he performed the operation and secured a magnificent foal. On this success he received a handsome reward and a *khillat* from the Mir. When the foal grew up Su Malik used to take it about with him. The animal is said to have turned out so swift and strong a steed that Su Malik brought him back from a round of 100 miles in four hours. Su Malik then requested Taj Mughal that, as the animal had grown fit for riding, he should hold a Durbar to perform the ceremony of riding the new steed. A day was fixed for the Durbar, and invitations were sent by the Mir to all the officials and headmen of the district. On the appointed day the magnificent Tullufar was brought by Su Malik to the crowded ground caparisoned with gold. When everything was ready, Su Malik begged the Mir to give him permission to show the spectators the animal's swiftness and merits. It was given, and Su Malik who was attired neatly, addressed the Mir in the following way :—

"I, who was brought by your men as a captive from Gilgit, am Su Malik, the Rá of that country, and now I am going back to my native land on this *tullufar* pony of yours. If it is in your power to arrest me now, pray try your utmost! Adieu!"

As soon as he had uttered the above words, he spurred the pony, and galloped away at full speed from the assembly. A number of riders on good ponies were sent after him by the Mir to arrest him wherever they could find him, but in vain, as no one could catch him except one rider on a certain good mare. This man caught up Su Malik in Gujhal[1] territory. On seeing him Su Malik stopped to await his arrival, and to satisfy his curiosity by seeing the excellent mare which had been able to compete with the *tullufar*. As soon as the man approached Su Malik, the latter informed him that one man like him was useless in attempting to arrest Su Malik, that he would lose his own life, and that it was better for him to return with the happy news that his mare was in foal with a *tullufar* colt. The rider was very pleased to hear this of his mare, and returned to Badakhshan to tell to the Mir that he had come back unsuccessful. From Gujhal Su Malik came to Yasin *viâ* the Darkot pass, and found that his sister was badly treated by her husband Farmaish, who had no fear of Su Malik, thinking that he would never return to his country. He was therefore severely punished by Su Malik. Now Su Malik is said to have been given a piece of advice by an old man of Yasin who was well aware of his sudden fits of rage. These he soon learnt to overcome by following the advice, which was not to punish with the weapons at hand, but to start out and search for others at a distance. When Su Malik reached Gilgit, he saw a stranger sitting in his house by the side of his wife, and became so angry that he felt impelled to kill both his wife and the man by means of a big stone which was lying quite close to him. But he remembered the advice of the old Yasini and went out to search for another weapon. In the meantime he came to know that the man whom he had thought to be a stranger was his own son Khisrau Khan, whom he now embraced. In gratitude he sent a good reward to his old Yasini adviser.

[1] Wakhan was formerly called Gujhal, and its people Guijhai. As some Guijhais have come and settled in the upper part of Hunza, that country is now called Gujhal.

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BY

C. A. SHERRING, F.R.G.S., I.C.S.

Smithsonian Institution,
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Notes on the Bhotias of Almora and British Garhwal.

By C. A. Sherring, M.A., F.R.G.S., I.C.S. *Communicated by* R. Burn, I.C.S.

[Read August 2nd, 1905.]

[The term Bhotia outside the districts of Almora and Garhwal is applied generally to Tibetans, but in these two districts it has a distinctive meaning of its own and is applied to a race of men who are not Tibetans but come of Tibetan stock.]

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The accounts that we find about the Bhotias of Almora and British Garhwal in Atkinson's Gazetteer, and the interesting articles written by Mr. Traill, Commissioner of Kumaun, eighty years ago, are at the present time misleading, in that they do not accurately describe the people as they are at this moment. The fact is that the Bhotias have undoubtedly changed in many of their ways and customs, owing to the influences of Hinduism, and that now we have more accurate information than was available formerly.

It is impossible to discuss the Bhotias, as a whole, on the supposition that as we give these people the one name, we can review their habits and customs as if they belonged to one more or less homogeneous tribe. The further our enquiries take us, the more clearly we see that they must be subdivided into their different clans, and each clan must be dealt with by itself, entirely apart from its supposed connection with any other clan. And first of all we have to realize how entirely distinct are the usages and even language in the different subdivisions.

We find that although some of the Bhotias have forgotten the original dialect which was, at one time, current amongst them and now speak the ordinary hill dialect common to the neighbouring hillmen, yet there are five dialects which are still alive, and spoken to some considerable extent. These all belong to the Tibetan branch of the Himalayan group of the Tibeto-Burman family, and give us much assistance in subdividing the Bhotia people.

These five dialects, and the number of persons approximately who speak them, are as follows:—

1. Rankas or Shaukiya Khun (614). This dialect is spoken in Goriphat, Johar, and four villages of Malla Danpur, Almora District.

2. Byansi (1585); dialect spoken in patti Byans.

3. Chaudansi (1485); dialect spoken in patti Chaudans.

4. Darmiya (1761); dialect spoken in patti Darma, all in Almora District.

5. Bhotia or Huniya (820); dialect spoken by Huniyas, Khampas and Bhotias scattered in different places. The term Bhotia is used here in the sense common outside the districts of Almora and Garhwal.

[*Note.*—This is taken from Mr. Grierson's ethnographical correspondence.]

A Bhotia who talks one of these dialects often cannot understand another who speaks a different dialect. The Bhotias themselves, however, do not admit their Tibetan origin, except the Nikhurpas of Milam, in Almora, and the inhabitants of Malpha, in Garhwal. The latter have a number of their clan still living north of Toling in Tibet close to the Pass called Bogo-la.

All Bhotias, except Huniyas, wherever they live, have two castes, *viz.*, Rajputs and Dumras. In the latter they consider Lohars, Hurkiyas, Dholis, Odhs (carpenters), Bajelas (basket-makers), and Bhools (tailors and shoe-makers). There are no Bhotia Brahmans, although there are many Brahmans living in Bhot, *e.g.*, Dobedhiyas, Pathaks, Karakhetis, etc., who perform priestly functions for the Bhotias. These are received on terms of equality by other Brahmans. These Brahmans have entered Bhot from the South, and are in every way the same as their fellow-castemen in the rest of Kumaun. In conformity with these divisions of language it is best to subdivide the Bhotias as follows:—

Partially Hinduized Rajputs.

1. The Jethoras who speak the Rankas or Shaukia Khun and live in Goriphat and Malla Danpur and Johar, Almora District.

2. The Tolchas and Marchas of Mana and Niti, in the Garhwal District, and Johar in the Almora District. These have forgotten the old dialect and employ the ordinary hill-language of their neighbours.

3. The Rawats, or Shaukas, or Shokas (a corruption of Sokpa) of Johar, Almora District. These have also forgotten the original peculiar speech of their race and now use the hill-dialect.

Nominal Hindu Rajputs.

4. Byansis
5. Chaundansis
6. Darmiyas

} living in the *pattis* of Byans, Chaudans and Malla Darma—all in the Darma pargana, Almora District.

7. *Lower caste.*—Dumras, who live through the length and breadth of Bhot in Garhwal, Johar and Pargana Darma, Almora District. These are a clan in themselves, and their customs and habits everywhere are similar.

8. *No caste.*—Huniyas, who are closely allied to the Tibetans and are Budhists and nominal Hindus both at the same time. They ought not to be called Bhotias at all, in the sense generally understood in the Almora and Garhwal districts, as they are domiciled Tibetans.

Jethoras.

The name Jethora derived from Jeth, or elder brother, is given to those Bhotias who are popularly supposed to be the descendants of the first Bhotia settlers in Johar. They are to be found in the villages of Goriphat, Talla Johar and Malla Danpur, Almora district, and their subdivisions are named after the names of the villages in which they live. Thus we have Papra, Chilkola, Ringwal, Bothyal and Golphal, who are supposed to have come originally from Doti in Nepal. Then there are Namkival, Tangyal, Jaimyal, Pachhain, and Tomkyal, whose original habitat is unknown. The Joshyals claim Jhusi near Allahabad as their original source, and the Barniyas admit a Tibetan origin. The Papras and Barniyas are considered Vaishyas.

The remarkable point with reference to the Jethoras is, that they do not trade with Tibet, and in fact are not traders like the ordinary Bhotias. They subsist by cultivating the soil like the zemindars in the neighbouring *pattis*, and never even visit Tibet. They are a stationary people, who cling to their homes and are rarely seen away from their villages in other parts of the district, and in this respect they contrast strongly with the other Bhotias who live a migratory life, and whose principal object is trade with Tibet, which they visit several times a year and whence they carry merchandise to the foot of the hills.

The Jethoras have a very good opinion of themselves and put forward claims to superiority. They allege that in ancient times they held the Johar *patti* on a contract from the ruling prince, to whom they paid a nominal sum. But this claim to superiority is not admitted by the other Bhotias, none of whom, whether from Johar or Darma, will marry with them, or even eat with them. The Jethoras are quite agreeable to eating *kachcha* and *pukka* from the hands of all other Bhotias. They are becoming rapidly Hinduized, but have not yet adopted all the Hindu customs: for instance, they do not remove their clothes when eating rice and *dal*, and they do not wear the sacred thread. They generally speak of themselves as Rajputs. The gods of their worship are those of the ordinary Hindu religion such as Durga, Debi, Mahadeo. They also worship the mountain Panchachuli and Goril and Maheswar.

While speaing of inferior Bhotias it is to be noted that the term Kunkiya is generally applied to such. Originally the Kunkiyas were slaves, who had received their freedom, but now the word is applied to a Hindu who marries the daughter of a Bhotia, and to his offspring, and finally to any Bhotia, who has gone down in the world, *i.e.*, has fallen from riches to poverty. They are considered to be Rajputs, but of a very inferior type, and other Bhotias, including the Jethoras, refuse to marry with them or eat with them.

Marchas and Tolchas.

In Garhwal there are only Marchas and Tolchas, who freely intermarry amongst themselves and accept the daughters of the neighbouring hillmen who are not Bhotias, although the latter will not take the daughters of these Bhotias in marraige, and the alliance is considered one of patronage. Outside Garhwal, Marchas and Tolchas are to be found in Johar of the Almora District. Here Tolchas and Marchas marry amongst themselves,

and Marchas freely intermarry with the Shokas (or Sokpas), otherwise known as Rawats of Johar. Tolchas go so far as to give their daughters to the Rawats, but refuse to take the daughters of the Rawats for themselves, as they consider themselves as superior. The Niti valley is inhabited by Marchas and Tolchas, and the Mana valley by Marchas only. Malari village is the lowest village in which any Marchas are to be found. Below it and up the Rini valley the inhabitants are all Tolchas. The Marchas of Mana are divided as follows :—

(1) Malphas, who are really Tibetans, and have others of their clan living North of Torling near the Bogola; but they do not intermarry in Tibet now.
(2) Badwals, said to have come from Barahat near Gangotri in Tihri-Garhwal.
(3) Bhatrajias, supposed to have come from the Girthi river.
(4) Dharkolis, alleged to have come from Malla Nagpur.
(5) The original inhabitants of Mana.

These five clans intermarry. They are connected with the famous Badrinath temple, being part of the Panch Dimris, *viz.*, Rawal, Dimri, Duryal, Joshyal and Marcha. As the Badrinath temple is on Bhotia land the Marchas of Mana receive an annual payment of fifty rupees in cash, twenty seers of *chana* (gram), and one *pagari*. This is a fixed payment and is conditional on the fact that at the *Janam Ashtmi* festival, when the idol is carried through Mana to be bathed at the waterfall and fed at the Mata Murati, the women of Mana, led by the Malpa women, clothed in festival attire, shall sing hymns in honour of the god.

Passing to the Almora District we find that the Tolchas to be met with in Johar never marry the Johari Shokas, and that only the Garhwal Tolchas part with their daughters to the above.

Shokas or Rawats.

In Johar there are many divisions of the Shokas, or Rawats: in fact in each village there is a caste which derives its name from the name of the village. No such caste can marry within itself: it must marry outside. Thus there are:—

Pangtiyas, Dhamsaktus, Nikhurpas, Nitwals (or Tolchas), Milamwals, Jang-pangis, Burphwals, Biljwals, Martoliyas, Tolias, Laspals, Paspals, Mapwals, Sumdyals, Pachhpals, Rilkutiyals, and Khinchyals. Some of these affirm that they come from Garhwal; others from Doti in Nepal, or Benares, or Tibet.

The Rawat ancestor of the Milamwals obtained permission from the Gartok Garphan to establish himself in trade, and built Milam and Burphu, and received a grant of Chunpal from the Huniyas. The connection with Tibet is still kept up, in that the headman (*padhan*) of Milam has a so-called Jagir at Khiunglung in Tibet, which entitles him to receive annually as a gift five goats and two rupees worth of *ghi* (clarified butter), and as many beasts of burden or coolies as are necessary for the carriage of his effects, whenever he goes to, or returns from, Missar in Tibet.

The Rawats of Johar are earnestly striving to follow all the ordinances of the Hindu religion, and invariably speak of themselves as Hindus; in fact, so far has their progress

gone that some authorities have classified them as Hindus. There can be no question, however, that whatever opinion these Rawats may hold concerning themselves as orthodox believers in the Hindu faith, the other Hindus do not consider them orthodox ; and the lowest caste will not eat with them, although all, except Brahmans and superior Hindus, will smoke with them. On the other hand, the Rawats and all Bhotias will eat *pakki* (by which they mean cooked food as opposed to uncooked) with Rajputs and Brahmans, and *kachchi* with all except Doms and Muhammadans ; and similarly they will drink with all except Doms and Muhammadans. In Nepal, however, Hindus of the better castes will drink with them.

There could be no greater mistake than to suppose that the Mitakshara law is applicable to any of the Bhotias ; in fact, excluding Johar, the Bhotias do not even know what the Vedas are. It is in questions relating to property, the law of inheritance, adoption and woman's property, that the difference between the Bhotias and other Hindus is most clearly seen. A woman has no special property of her own, although at the will of her husband or father she may be allowed to keep what she earns ; but this is entirely dependent on the pleasure of the man concerned. The laws of inheritance are not those of Hindu law, and the principles applicable to adoption, as found in Mitakshara law, are unheard of. As a matter of fact, in cases of adoption the choice invariably falls upon the heir. The idea of a joint family is quite unfamiliar. The father is the absolute owner of all property, including ancestral, and can mortgage on his own signature without reference to his sons. When the infirmities of age impair the father's business capacity, the sons divide the property and he is more or less at their mercy. There is no fixed share apportioned to him, but custom generally insures that some extra portion is put aside for him, and he lives with the son who is his favourite. Frequently the father is neglected, and cases of great hardship on parents who have been rich, but whose property has been taken by the sons, are often met with. A son can at any time insist on partition. Johar and Mana are exceptions, in that the father can refuse to give his sons shares in his self-acquired property ; but in regard to ancestral property he has no choice.

There can be no doubt that originally the Johar Bhotias followed all the customs and ceremonies at present to be found in Darma ; but since the Butaula Rawats migrated to Johar from Garhwal *via* Tibet, some three hundred years ago, a gradual change has been taking place, and the old customs have given place to the ordinary ceremonies of the Hindu faith, such for instance as *Bratbandha*.

Ceremonies among partially Hinduized Bhotias.

The following are some of the ceremonies to be found among the partially Hinduized Bhotias :—

Birth.—On the fifth day after child-birth *Pancholi* is performed, the woman and child being allowed to occupy a separate room or house, but no one is permitted to touch them. Should anyone by accident touch them, the only purification is by sprinkling cow's urine on the body and tasting the urine.

On the eleventh day, *Namkaran*, or "name-giving," called *Mishi* in Johar, takes

place. On this day Brahmans purify the woman and the child, and they may then enter the house and touch water. A horoscope is prepared according to the rules of the Jyotish Shastra. When the first two or three children in a family have died young the right nostril of the new-born child is pierced, or the child is given to a *fakir*, who shortly after returns it. When the first-born has survived, but others have died in early youth, a large piece of *gur*, or sugar, is broken upon the back of the first-born, so that the newly-born infant may start its young life with the bad luck of the past broken. A child born in *Mul* and *Ashlikha Nakshitras* is handed over to some third person with whom it remains up till its tenth or eleventh year, the parents not seeing its face till then. After the sixth month *pasani karam*, or *chhoti diwai*, is performed. The Brahmans choose the day, and the child's paternal aunt gives the child *sattu* mixed with curds to lick for the first time. New clothes and ornaments are usually given at this ceremony.

Bratbandha takes place between the ages of eight and twelve years. The sacred thread is not, as a rule, put on at this ceremony; in fact, only a few Bhotias wear the thread, the reason being that the attendant obligation of bathing daily is so irksome in the cold journeys to Tibet, that few care to incur the obligation. However, after the *Brathandha* ceremony they never eat without washing the hands and face, which is a distinct advance on the prevalent dirty habits of the other Bhotias; and the Butaula Rawats go so far as to always do *sandhya* as well before taking food. The *dhoti* is henceforward worn, the hair of the head has been cut short, and the boy can fast and perform Shradha, if his parents are dead. The boy's ears are pierced, and the family priest instructs him as to his future conduct. On the fifth day afterwards *dunkhor* is performed.

Marriage.—In regard to marriage, the ordinary Hindu customs are followed. Some person, often the family priest, is sent in search of a bride. *Mangni* takes place between the ages of nine and twenty-five years; and after the *mangni*, or asking, usually six months elapse before the formal marriage (*shadi*). The *gona*, or consummation, takes place at the age of maturity. In all marriage arrangements the girl is never consulted; the parents on both sides usually make all their plans, absolutely regardless of the children concerned. Every man and woman is married, and this is a notable difference between these Bhotias and those of Darma Pargana, where in every village many unmarried persons are to be found, the reason being that there marriage depends upon the will of the parties, who are always of mature age at the time of the marriage contract; and instances are not uncommon of men and women who have remained unmarried all their lives, because nobody would marry them.

Marriage is (1) by *kanyadan*, the girl being given without a price; (2) by *damtara*, *i.e.*, giving a price for the girl to the parents; (3) by *adala badala*, or exchange, a man giving his own daughter and taking for his son, or his brother, the other man's daughter. Men of position are ashamed to get a girl by *kanyadan*, though they have no objection to giving their own daughters in this way.

Brahmans perform the ceremony according to the Shastras. An altar (*bedi*) is made and fire placed on the top, and at the four corners are little trees, and all round the altar are pine trees. The bride and bridegroom take seven turns round the fire and

the altar, this being the binding part of the ceremony. The bride puts her foot on a *sil*, or stone used for grinding, and as she goes round pretends to slip and is caught by the bridegroom each time, in this way signifying that in future all lovers will be ground to powder.

Before marriage a girl wears a nose-ring called *bali*, but after marriage and until her husband's death she invariably wears the *nath* (nose-ring).

A man can, and often does, have two or three wives. A marriage is always accompanied by lavish expenditure.

Remembering that each village contains a different branch of Bhotia Rajputs, it has to be noted that intermarriage within the village is strictly forbidden ; marriage must take place with some one of another village. For instance, a Biljwal cannot marry a Biljwal though he can marry a Martolia.

Widow-marriage, in the sense of a marriage with all the honour and dignity of a first marriage, is unknown.

However, it is a common practice for widows to go and live with other men ; but the unions thus created never occupy the same rank in popular estimation as an ordinary marriage, although no disfavour is shown such as outcasting from food or drink. The man in question pays a sum of money to the deceased husband's relatives, who give in return what is usually known as a *ladawa*, or relinquishment. Generally the widow of an elder brother goes as wife to the younger brother.

Divorce is known, and the form of divorce is simplicity itself. A man tells his wife to go, and she leaves him. If she wishes to live with another man the union is not known as a *pakki shadi*, or true marriage. The man in question has to pay for her to her former husband, who on his part gives a *ladawa* or relinquishment. If the divorced woman has daughters by the first husband, he will get the benefit from them, that is, he will receive the money for them when they get married, and they are his heirs and not heirs of the second husband.

Death.—The funeral ceremonies are on the analogy of the Hindu rites. If a boy dies before the *bratbandha* ceremony he is buried, and not burnt, and salt is put into the grave with him ; otherwise the usual custom is cremation. All the sons and kinsmen of the *gotra* shave the head, moustache and beard, and the eldest son sits in *gat kriya*. If the eldest son is not at home the second son takes his place, and if no son is at home the priest does the duty. The kinsmen of the *gotra* fast for one meal.

Gold, called Hiran, is put into a dying man's mouth, and after death the body is tied in a coarse white winding-sheet (*katara*) and fastened on to the bier (*jhanji*), and over all is thrown a silk shroud (*pitambar*). The funeral procession is composed of mourners who go bare-headed preceded by three boys, or men, holding a strip of white cloth one at each end and the third in the middle. This is called *bat*. After them comes another man throwing *khila*. This peculiar custom is unknown in Kumaun or Garhwal amongst hillmen.

At the pyre a head-bone is kept to be thrown into the holy lake of Mansarowar, or into the Ganges ; and until the opportunity for doing this may come, it is put aside with some gold in a small brass box in the hollow of a tree or under a stone. All the

mourners present at the cremation bathe, and on their return are purified with cow's urine, when they receive two loaves of bread each called *chhak*. On the tenth day the polution, *chhut* or *shutak*, leaves the kinsmen, who then bathe and put on new or clean clothes. A death in a village is considered unlucky, and people avoid undertaking any particular ceremonies from which they hope that success will ensue.

On the twelfth day the ceremony of *godan* is performed, and afterwards the kinsmen touch the *pipal* tree and wear *pithawa*.

The kinsmen abstain from flesh until the fifteenth day, but the eldest son abstains for a whole year, that is, until the performance of the annual death-rites, or *barsi*. These rites are repeated from year to year.

After the touching of the *pipal* tree it is a common thing for the son to go on pilgrimage to the Mansarowar lake, or Hardwar, in order to cast the head-bone of his father into the sacred waters.

Worship.—As is to be expected, we find that some of these Hinduized Bhotias still worship Tibetan deities. For instance, the Nikhurpas, who eat and drink with the Johar Rawats and marry with them, worship the god Dhurma. This deity is specially sought after in the rainy season when the people have tired of a long spell of wet weather and hope by propitiation of the god to effect a change in the climatic conditions prevailing. Two poles are fastened in the ground; to the top of one is fixed an iron or brass trident surmounted by a yak's tail, and to the top of the other an image (*murtti*) of a man's head. Throughout the ceremony of worship music is played, and finally a goat is slaughtered. Meanwhile the devotees are anxiously awaiting the moment when the god will manifest himself by taking possession of one of the throng. Suddenly some man is seized by the religious frenzy, and rushing forward drinks the blood of the goat, and in this ecstatic state dances round the poles; and finally climbing the pole, which holds the idol, he imprints a bloody kiss on the mouth of the deity. A temple with rooms has now been built in honour of Dhurma: this is a new departure, for hitherto he owned no habitation built by men's hands.

Similarly, at Burphu and Tola, the Tibetan god Lhamsal is worshipped. The people fell a large tree, and carrying it to an open space fix it in the ground and make it firm with three ropes. Strips of cloth of every description are then fastened to every portion of it, and yaks' tails are tied in different parts of the tree; after these preparations the people sing and dance round the tree for three days on end. Persons who have had a son born to them are especially devoted to the worship of this god, and once a year offer a goat and liquor.

One of the most remarkable deities worshipped in Garhwal is the god Ghantakaran or the bell-god. It is common to find a large bell, sometimes one-and-a-half feet long, suspended to a cross-bar supported by two uprights on the top of some lofty mountain. The lonely goat-herd, or the zealous devotee, rings the bell when passing the spot. The bell-god is very specially worshipped for nine days from Utraini in the month of Magh; and in this special and remarkable service there are associated with him three other gods, *viz.*, Kailas, the Tibetan deity; Kumer; and the deity Nanda Devi. The last named is the loftiest mountain in the British Empire, 25,650 feet high, and is situated in

Bhot, and the first is a most sacred mountain near the Mansarowar Lake and is revered by Buddhists and Hindus alike, and is commonly known as the abode of Shiva. The annual adoration takes place at Pandukeshar iu Garhwal Bhot, and the ceremonies are specially interesting as they afford an instance of the religious fervour, or ecstacy, which seizes the devotee and makes him act as though goaded by a mania. An iron tripod, *janti*, is made red-hot in a furious fire, which is zealously fed by the crowd. The men who are particularly favoured by the manifestation of the gods are Duryals of one family, living in Pandukeshar. At the present time Gobind Sing is the favourite of Nanda Devi, Dharma of Kailas, Mehrban Sing of Kumer, and Debu of Ghantakarn. Only the gods Kailas and the bell-god manifest themselves; when the religious excitement is at its highest the two favourites of these gods suddenly rush down to the river and bathe, and dripping with water they rush towards the scorching fire. The crowd with cries of, "Behold the god!" rub butter on the hands of the one who is devoted to the bell-god, and he immediately raises the red-hot tripod and inverts it over his head and puts it back, while the other leaps into the flames and leaps out again. This is the description of an eyewitness.

The deity Acheri is worshipped everywhere and is called Nungtang in Pargana Darma. When anyone has sore eyes, or a lingering illness, the goddess has to be appeased and her influence (*dos*) removed, and this is effected in one of two ways. Either a brass dish (*thali*) is put on an earthen pitcher (*ghurra*) and is beaten until the affected person begins in a frenzy to dance, and indicates what particular sacrifice will find favour with the deity; or a dooly is made with sticks and cloth, and is worshipped with cakes (*puris*) and lights, after which it is carried to some lonely spot and left, the hope being that the malevolent influence is left with it.

The Jethoras worship Balchan and Runiya, and the Milamwals resort to Sain when a sheep or goat is lost, and the deity leads the worshipper in his search for the straying animal. When bears are doing much harm to the sheep and goats, or when an animal is sick, goatherds whether in pargana Darma, or Johar or Garhwal make supplication to the brothers Sidhuwa Bidhuwa. It is also interesting to note how particular deities go out of fashion; for instance, Bir Singh and Jammu Danu are no longer worshipped as they were heretofore.

Apart from the above deities, the Bhotias who are partially Hinduized worship all the gods of Hinduism. Devi and Nanda Devi are particular favourites everywhere. As many as two hundred and fifty goats will be sacrified to Devi at one time, as well as many buffaloes. The Bhotia Rajputs eat the flesh of the goats themselves, but Dumra Bhotias eat the flesh of the buffaloes.

Food.—The Rawats of Johar are more Hinduized in some ways than the Jethoras, Tolchas, and Marchas, for they know of Gotra, Sakha or Pravara, whereas the latter do not. The question of taking food with certain persons and not with others, which is of absorbing importance to the ordinary Hindu, is treated in some respects very seriously; for instance, the Rajputs do not eat with Bhotia Dumras, and in other respects very lightly, in that they are quite willing to eat with cow-killing Tibetans. Bhotias do not care, as a rule, to partake of the Tibetans' food, solely because the latter are abominably filthy in their

habits, and generally eat rice and meat which is only half-cooked ; while Bhotias who are of much better social condition and enjoy greater material prosperity look with contempt on such poor food ; but supposing that the food is properly treated and rationally prepared all Bhotias will willingly join Tibetans at a meal. The Johari Rawats profess not to eat with Tibetans but only to drink tea with them. As a matter of fact, the beverage called tea contains in it besides tea, large quantities of butter, salt, *sattu*, and frequently flesh, so that the above professions of the Rawats are scarcely true. All Bhotias, whether of Niti Johar or pargana Darma, eat wild boars and fish of every kind, but not snakes, lizards, jackals, beef, fowls, or the long-tailed goat, except the Dumra Bhotias who eat the two last named. In Johar the men eat first and then the women, and leavings are always for women and juniors. In pargana Darma there is no custom of eating the leavings, as men, women and children all sit down and eat together. It is impossible for the Bhotias to worship any of their deities without plentiful supplies of the liquor called *jan*. This is a fermented liquor and differs from *daru*, which is distilled ; both are made from rice, wheat and grain of all kinds, such as *palti*, etc.

Dress : (Difference between Pargana Darma and the rest of Bhot.)—In the matter of dress there is a great difference between the Bhotias of Garhwal and Johar and those of pargana Darma. The men, it is true, generally dress in woollen stuffs of home manufacture, their garments being the coat (*anga*) trousers (*paijama*) and cap (*topi*) familiar to all hillmen, and very generally a long frock coat (*bakhu*), while their shoes are the same as those worn everywhere in the hills, though sometimes they wear woollen boots of chequered colors which come from Tibet, and are soled with rope very ingeniously and finely plaited. These boots are called *baukch* or *babch*, and are found everywhere except among the Jethoras who do not visit Tibet. They cost three to four rupees a pair. The women, on the other hand, are different to the ordinary hillwomen. The Mana, Niti and Johar women wear a skirt (*lahanga*), coat (*kurta*), waistcoat (*tawa*), and shirt (*angia*)—and finally a head-gear (*khupi*) which goes one to one-and-a-half yards down the back, and with which the face can be covered. The custom of *pardah*, i.e., covering the face, is extending, but happily the practice of close seclusion at home is unknown. However, *pardah* is so far known that the elder brother never sees the face of his younger brother's wife, nor does he ever speak to her or go into the same room with her. Gold ornaments are very common with the women of the above locality, whereas they are unknown among the women of the Darma pargana, except in a few of the very richest families in a *patti* Byans.

The Darama pargana is divided into three *pattis*, viz., Byans, Chaudans and Darma, and the residents in these three *pattis* have customs which distinguish them by a sharp line from all other Bhotias; and, further, the customs of the three *pattis* are not all exactly alike. The women of Darma pargana wear a short-sleeved coat (*chung*) which reaches down to the ankles and is fastened round the waist: a skirt (*phu* or *bala*) which is fastened round the waist by a long sheet like a *dupatta* (known as *jujang*): a cap (*chugti*) on the head, and after marriage a much larger cap of thicker cloth (known as *chukla*). In case of mourning the *chukla* is worn inside out. The nose-ring (*nath*) is unknown in *patti* Darma and Chaudans, and the Byansis replace it by an ornament in

the shape of a clove (*bira*). The hair is plaited into a tail which comes down to the shoulder-blades, and in Chaudans a little lower. The front hair is plaited into slender threads (*tzi*) which are very carefully arranged on both sides of the face, and a silver chaplet invariably holds the plaits in place (known as *anjang*). Long woollen boots imported from Tibet (*baukch*) complete the description. Richer women wear in addition two sleeves (*rakalcha*) which are pulled on over the arms.

The spelling of different words in the Bhotia dialect cannot be adequately compassed by the Hindi vocabulary: the Tibetan alphabet alone expresses the sounds properly. There is no written character for the Bhotia dialect.

Birth.—We cannot expect to find the Brahmanical influences strong in the Darma pargana as there are no resident Brahmans whatever, and the Bhotias being a migratory people, it is difficult for them to call in their assistance, when they are on one of their trading excursions. Still the Brahman with his supposed knowledge of the stars and skill in prophetic announcements as to the future has a peculiar charm for this superstitious race, and certain individuals acquire a degree of popularity, such as the Brahmans of Legam in Nepal and Charma in Askot, and their help is much sought after in the framing of horoscopes. To ascertain with accuracy the exact time of birth recourse is had to the water-clock, and the hour thus recorded is kept with jealous care until a visit can be conveniently made to the Brahman, who will, after due consideration, authoritatively declare what name is the most fitting for the child, having regard to the position of the stars and the period of the calendar. The names so given are invariably of the purest Hindu type, such as Lachh Ram, Dharm Sing, etc., but meanwhile the impatient family has already named the new-born child with some truly Bhotia name, which will cleave to that child throughout its life notwithstanding that the Brahman has given it another orthodox and auspicious name. This fact will account for the double names that are so familiar. Side by side with the well-known Hindu types we have names such as the following :—

Names of animals, as, *mushiya* (mouse), *kukuria* (little dog), *hansu* (swan, in Byans), *maina* (bird), *bandar* or *bandaru* (monkey), *bila* (a cat), *nikhi* (dog), or the girl's name *Wombari* (*wom* = bear, *bari* = wages); or to avert the jealousy of the gods, evil names, as Dam (let the scoffer note that this means blacksmith), *pang* (a Tibetan), *chhora* (a slave), *khyembo* (a Tibetan word meaning a wanderer), *dola* (a beggar).

Tibetan names are not uncommon, such as, *chhiring*, which is derived from *chhi* life, and *ringbo*, long.

After childbirth the mother is kept in an outhouse for ten or eleven days, but if there are only fifteen days to the end of the month, then till the last day of the month. The ceremony which marks her return to the house is called *milin khu kwormo*, taking near the fire, and is celebrated by feasting, and offerings to the gods, and prayers. The feasting consists in eating the offerings which are composed of rice and *puris* and *dalang*. The *dalang* is so typical of all Bhotia ceremonies that it merits description. *Sattu* or flour is made from parched grain, and this *sattu* is worked into a cone one-and-a-half feet high, pointed at the top and large at the bottom, and from the sides of this cone stand out spikes of *sattu* from the base to the vertex. The *dalang* occupies a leading place in all social rites, and so important is it that the binding part of the

marriage ceremony (to be described later) consists in the bride and bridegroom breaking a *dalang* and eating it.

The ears of the child are pierced at an early age, as men, when old, are partial to ear-rings and pendants, and women at all times wear ornaments in their ears. In the case of a girl the women make a ceremony out of the custom and formally eat parched grain (*pu*).

After the birth of a man-child it is the father's important duty to present it together with two *dalangs* at the *saithan*, or shrine of the god, on the annual festival of *milu changmo* (from *milu*, spite, and *changmo*, throw away), which is held for the special purpose of averting the evil eye, and removing the jealousy of the gods, from the crops and baby-boys. The *saithan*, or god's place, is a little chamber a yard in length and the same in breath, and two or more yards in height, in which there is a white stone, *viz.*, the familiar *ling*, and on the top of which there is a small branch of a tree adorned with narrow strips of white cloth (*daja*) which flutter in the wind. The villagers gather together at the *saitthan* bringing with them plants of every description from the fields, and flour made from the phapar (called *sili*), and when all are assembled the plants are twisted and plaited into a wreath, and a venerable elder, chosen by popular acclamation, is placed on a commanding spot and given a sickle, and near him is placed the *sili* or flour. It is the duty of the old man to strike the wreath in such a way that the flour sinks into the interior and intermingles with the leaves, and to exclaim: "Begone, the evil eye and the jealousy of gods and men." The wreath is then taken to the nearest cross-roads, and after the discharge of fire-arms is left at the parting of the ways.

In the case of a first-born male child in certain villages of *patti* Byans such as Garbyang, Budhi, and Kuti, and the Nepalese village of Tinkar, the father holds an annual festival called *barani*, or *barai*, at which with considerable expense he feasts the men of the whole village with boiled rice, and next morning they resort to the *saithan*, taking with them a long slender tree, cut just above the roots, thirty to fifty feet in length and with branches springing from the top (called *darcho*), which they erect in front of the shrine. These shrines can generally be recognized from a distance by means of these poles, or *darchos*. The little boy is then brought, dressed in his best and on the back of his mother, and the father presents five sheep and two *dalangs* to the god. The sheep are to be killed with one stroke of the *kukri*, and should the striker fail, the onlookers immediately mulct him of a four-anna piece for every failure.

In the patti Chaudans the father has to present his boy-baby formally to the elders (*panch*) with two "*dalangs*," and they with equal formality overlook the boy. This ceremony usually takes place in the months of *Sawan* and *Bhadon* on some date which is mutually convenient, and a different date is fixed for each parent in the village who wishes to present a son born that year, and each presentation implies a feast to the elders.

As a boy grows up he is taught some profession, and, at the age of twelve years, he is expected to be fit to enter upon his own line of life. As long as his father lives he is compelled to place his earnings in his care, but should he outrival his parent and brothers in business capacity, he is given great freedom of action. With regard to joint

property, and partition, and the rights of the father as against the children I have already noted above. It is not to be forgotten that each son can claim a share irrespective of the number of wives that his father may have: for instance, if there are two wives, and one has one son and the other two, the shares will be one-third each, and not half to one and a quarter to each of the others.

Marriage.—The Rajput Bhotias of *dattis* Darma, Byans and Chaudans intermarry freely, and it is a recognized rule that marriage must take place with some person of a different village, and that if the contracting parties both belong to the same village it is absolutely necessary that they should be the descendants of different stocks. The best marriage for a man is with his father's sister's daughter, or his mother's brother's daughter; but a man may not marry his father's brother's daughter, or his mother's sister's daughter. Similarly, a girl should marry her father's sister's son, or mother's brother's son, but not her father's brother's son, or mother's sister's son. There is no prohibition against a man marrying two sisters, but they cannot be his wives both at the same time: after his wife's death he can marry her sister. The Hindu custom of comparing horoscopes is never followed.

In *patti* Darma the practice of *mangni* is found, but in *pattis* Byans and in Chaudans it has been unknown for the last thirty years. When a boy is two months old or more his father sends bread and wine to the father of some girl younger than his son with whom he wishes his son to contract matrimony. If the latter breaks and eats the bread and drinks the wine, the arrangement is considered to be established. Two to three years later the arrangement is kept in memory by the boy's father sending a large vessel of liquor to the girl's parent, and there is feasting of friends and relations. Finally the actual marriage (*shadi*) takes place when the girl is between seven and eleven years of age, and the *gona*, or consummation, at the age of maturity. On all occasions great care is shown in choosing lucky dates.

But although the practice of *mangni* is found, still it is by no means common. Practically the universal custom of the three *pattis* Darma, Byans and Chaudans is to arrange marriages at the *rambang*, which is the village club and generally a very disreputable place. The Bhotias of Johar and Niti look down upon the *rambang* and will have nothing to do with it in their own country, having given it up many years ago, still they are quite willing to avail themselves of the *rambang* when they visit pargana Darma. In every village a house, or some spot, is set apart which is called *rambangkuri* or place of the *rambang*, at which men and women meet and spend the night singing lewd love-songs and drinking and smoking. Married and unmarried men go there, also single women, and married women up to the time that their first child is born. Girls start to go to the *Rambang* from the age of ten years, and practically never sleep at home after that age, the result being that a virtuous girl is unknown in pargana Darma. As is to be expected, a system such as this leads to the freest intimacy, and one sees a man walking about with his arm round a girl's waist, both under the same covering shawl, a practice common in Europe but rare in the East. Modesty is unknown, and there is a boldness in the faces of the women. Intentional miscarriages of illegitimate children are not at all uncommon.

Large villages have more than one *rambang*, and, as the avowed object of these *rambangs* is to arrange marriages, only those persons resort there who can marry one another, such as the boys of a neighbouring village, or, if of the same village, only those who are not relations. When a resident of a distant part of the country comes to a village, travelling on business, he would not dream of asking his friends to give him food and shelter, for this would be regarded as a disgrace: he must wait to be invited by them first. However, if he goes to the *rambang* he is sure of a hospitable welcome. In this way the *rambang* is a great convenience, but it can only be used thus by persons known in the village. A stranger is unwelcome without an introduction.

When the Bhotias are travelling or go to their winter quarters one of the first considerations is to set apart some spot for the *rambang*. If girls wish to invite the boys of a neighbouring village to meet them they wave long sheets, one girl holding one end and another the other end. This waving can be seen for miles, and is really a very pretty custom. It is also used in bidding farewell to friends and lovers, and is frequently accompanied by whistling, the two fingers being placed in the mouth as in the familiar London cat's call. Boys and girls are both adepts at this whistling, and it is the usual method employed by the boys of inviting girls to come out of their homes. On hearing the whistles the girls take a little fire and issue forth from their houses and proceed with the boys to the chosen spot, and, if they are old friends, they sit side by side round a blazing fire, otherwise all the boys sit on one side and the girls face them.

Often the girls dance, and sometimes the boys, while singing, smoking and drinking are continued until they are all weary, when sleep brings quiet to the scene.

The Bhotia songs, called *bajyu*, or old-fashioned, are the general favourites with the elders, and are always sung by the company with a fervour that shows how keenly all appreciate the formidable vicissitudes of climate, and the terrible hardships of mountaineering, or the brave deeds of their ancestors, which are faithfully portrayed in them. These songs of a bygone time, composed in the Bhotia language, are now supplemented by others in the ordinary hill-dialect, of which those called *timali* most closely resemble in their serious nature the old *bajyu*, whereas the gay *tubaira* (*tu* = fleeting and *baira* = a song) is full of levity, hilarity, and wantonness.

The Bhotia is a wise and cautious trader and circumspect in all his dealings, and it is not to be supposed that he allows the passion of the moment to override the value he attaches to a powerful alliance through matrimony with a rich neighbour's family, and therefore in almost all cases a young man takes his parents, friends and relations into his confidence with regard to the object of his affections, and it is only if the arrangement appears to be a satisfactory one that they advise him to make an offer of marriage. And we must remember that the young ladies of these parts are allowed full liberty in exercising a preference, and, further, that if they do not find a wooer they have the certain prospect of remaining unmarried all their lives. In every village there are women who have grown old and have never known wedlock, and similarly there are men (I know one of a leading position and great wealth) who fail to find a mate owing to some physical defect or bodily infirmity.

After due consideration the young man, either personally or through his friends,

offers the girl a sum of money (*lakchhab*) varying from five rupees to one hundred bound up in a piece of cloth. Generally the young lady is not directly approached, but the gift is handed over to her intimate associates (popularly called *taram*, which means literally a key), and they promise to exercise their influence with her. Her answer is not obtained without a family consultation of her relations, and should the match appear a suitable one the gift is retained, otherwise it is returned. In the case of acceptance the *tarams* always pose as having been indispensable.

In fixing a day for the marriage, Monday is carefully avoided as that is universally considered an unlucky day, and although the date thus fixed is well known by both families, a pretence is always kept up that the girl's parents are not going to let her go willingly. Therefore, when the bridegroom (*byolishya*) leaves his house to fetch his bride (*byolo*), his father summons his son's friends (called *dhami*) to a feast quietly at night, and subsequently they are despatched by him with secrecy in the dark hours in the company of his son to the bride's village. Arrived at the village they go to the *Rambang* where they find the bride and her bridesmaids (*shyasya*) with whom they consort for a time, and then carry off the bride in their arms. They convey her only a short way to keep up the semblance of forcible removal, and then wait and call the bridesmaids, and with them proceed homewards until they reach the groom's house, outside which they all sit down. Each one of the groom's women relations brings them a glass (*lota*) of liquor (*sagun*) to show the pleasure felt at the marriage, and in the name of all the gods they drink to future happiness. On entering the house the first part of the binding ceremony of marriage is performed by the elders of the village, who produce two *dalangs*, two glasses of liquor and rice, and calling all the gods to witness, break off the tops of the *dalangs* and give them to the bride and bridegroom to eat and the liquor to drink. Feasting now commences, which lasts for a fortnight, each family of relations taking it in turns to entertain the bridal party; and *jan* is drunk until, as a Bhotia described it, a man "is bathed in drink." Then follows the second binding ceremony—*puris* are given to the groomsmen and bridesmaids, and also a waist wrap (*jujang*) to each of the latter, and then the formal rite of *datu* takes place, *i.e.*, small pieces of *dalang* are broken off and put in a dish and the couple are made to exchange by giving a piece with one hand and taking with the other. This ceremony, done before the gods, with the elders and bridesmaids as witnesses, ties the final knot of wedlock. This is known as a *patham* day, that is, the releasing of a girl from her house, and the local blacksmith claims a gift (*dasturi*) which takes the form of money or a blanket. The bridesmaids are then allowed to go, but the groomsmen, who have by now become their firm friends, take them into their charge and feast them for some days. Before they are allowed to depart they combine in erecting as a sign of the marriage a *chandan*: that is, they place two long poles in the ground (*darchos*) and fasten a rope between them, and on to the rope they tie all sorts of things, such as, caps, books, mirrors, *dajas* of different colours of cloth, scissors, etc., and no one would dream of removing any of them. Subsequently it is a point of honour for the bridesmaids to invite back the groomsmen, a few at a time, and return their hospitality in their own village.

Keeping up the semblance of a forcible removal, on the day when *datu* takes place,

two envoys are sent from the groom's village to the girl's father, who ask the village elders to help them to persuade the father to accept the *fait accompli*, and present him with liquor and cloth. This ceremony is called *binti*, or intercession. The father proves reasonable, and a day is fixed for the bride and bridegroom, with two or three others, to pay their first visit to his house (this visit is called *nashi*). On the appointed day the groom's party arrives with sheep and goats for liquor and *sattu* for *dalangs*. In the early morning two sheep or goats are slaughtered, and the liver being removed is carefully examined by the local seer, who foretells the future. Before the village *panch*, or gathering of elders, twenty-nine rupees are tied up in white cloth and handed over; seven rupees being the mother's milk-money (*nuthung*, *nu*=milk, *thung*=drink), known as "*dud mol*" in Kumaon, and twenty-one rupees for the father, and an extra rupee to make up an odd sum, odd numbers being considered lucky. If the father is a rich man, he refuses to receive his share, looking upon the payment as the Joharis do upon *kanyadan*. Cloth is given to each relation and to the village headman, and *dalangs*, meat and drink are offered to the gods and then consumed. The tops of the *dalangs* are broken and pieces exchanged as in *datu*. *Jan* is given to the father and mother and relations, as well as to the *panch*, in small cups, and in each case a rupee, or an eight-anna piece, or some other coin, is presented to the drinker in the cup. This rite is known as *yar*. Finally, on a lucky day, the bride and bridegroom are allowed to go home, but not till each relative has given the bride cloth for a covering (*barko*) or dress (as (*jujang*). Her father, however, gives her nothing as he is considered to have done his duty to her, while unmarried, in presenting her with jewellery, and it is known that he will give presents afterwards up to the time of the birth of her first child.

It sometimes happens that a girl is carried away in reality by force from the *rambang*, but unless and until she eats *dalang*, *datu* and *jan* with her captor she is not considered to be married to him. If she is conniving at the elopement, against the will of her parents, and formally eats and drinks the ceremonial food, in process of time her relations are compelled to accept what cannot be mended. There have been instances when three parties of boys have been determined to carry off the same girl, and have blocked all the tracks, the girl being finally taken off across an almost impossible mountain-slope; but such cases are not the common practice of the people.

Divorce and Remarriage.—The customs of divorce and remarriage are very similar to those among the Johar and Niti Bhotias. In divorcing a woman the husband gives her a *thán*, or piece of white cloth (known as *jujang*) in Byans and Chaudans, and a sum of money, rupees twenty-two, in *patti* Darma. The cloth is invariably white, the idea being to give her, and her children by any subsequent marriage, purity and legitimacy, and until the cloth is given no divorce has taken place; in fact, should a man elope with another man's wife (*chalu*) he is shoe-beaten, and his goats and sheep stolen from him with their packs (*karbaj*), and the children are illegitimate. The husband, or any of his close relations, can so treat the erring man, or any of his close relations, and in doing criminal work it is useful for the Magistrate to be aware of the universal practice. The children are known as Teliyas until the second husband, or his children, have held a formal *panchayat* with the first husband, or his descendants, and an official account has

been taken of the original husband's marriage expenses, and these have to be made good, and it is only then that the white cloth is given which sets the woman free. An accompanying final ceremony is the waving of a fowl round the head of the woman and the man, and the heads of the members of the *panchayat.* There is no means by which a wife can claim a divorce, and if a man takes a second wife, and refuses to release the first, there is no way in which he can be compelled to release her however unhappy she may be, and she cannot marry again unless she has been properly released. However, in common practice a second wife is only taken with the concurrence of the first, generally in cases of sterility, or on the definite understanding that the first wife will be released.

A woman who has been married to a man and refuses to join him, and remains with her father instead, must be formally divorced, her father paying all the husband's marriage expenses, and the latter pays her a sum of money (*pati* or *nakhsira*) and gives her the white *jujang.* But should she die at her father's house before her formal release, her husband must perform her funeral ceremonies, though, should her father agree, he can give the formal divorce after her death, and before the time of the ceremonies. Great importance is attached to this, because the father and her relations consider it an unholy thing to mix her "bone" (to be explained later) kept after the death ceremonies with the family bones, unless a proper divorce has taken place.

Funeral ceremonies.—In regard to funeral ceremonies and customs a distinction is drawn between little children and grown-up persons, the line of separation being the permanent teeth. As soon as the milk teeth are being replaced by the permanent ones a child passes from the one category to the other. Little children are wrapped in wool and buried facing the east, the head being to the north and the feet to the south, and little is done in the way of ceremonial, though, should the child be on the point of getting its second teeth, children of a similar age are feasted on boiled rice. The dead body of grown-up persons is placed in a white cotton bag (*katro*) with the knees touching the chin, and not at full length as is the practice of the Hindus: further, the bag is sewn with thread spun contrary to the usual way. The bier is the same as that used by Hindus, *viz.*, two poles with slats of wood across. The corpse is then placed on the bier with the face to the east and is tied to the poles by a cord, and is carried head foremost in the procession. To the front of the bier is fastened a piece of white cloth, cotton if the deceased is a man, and woollen if a woman (the latter being specially prepared by the womenfolk for themselves), which is carried by the deceased's sisters, nieces and daughters on their heads in front of the bier, their *chuklas*, or head-gear, being turned inside out. The cloth is known as *am lugara, am* meaning a way and *lugara* cloth, the signification being that the spirit or soul of the deceased can be thus easily guided forth. The procession is led by a young boy or girl with fire in the hand for the funeral pyre; next come the women holding the *am lugara,* the nearest relation going first and others behind her in order of closeness; then the bier carried by four men-relations, *viz.*, one at each pole-end (it is absolutely necessary that the leaders should be near relatives); and finally the villagers with fuel for the cremation. On the way to the pyre all men-relations walk with their caps doffed.

The burning-place is usually on the bank of a river, or a brook, and the pyre is formed

of a stone enclosure (*rhapa*) six feet long and three feet wide, filled with wood, spaces being left to give free access of air. The clothes worn by the deceased at the time of death are placed among the faggots, and the corpse having been put on the top with face towards the east by one of the mourners, the bag, or *katro*, is cut at the face, and a piece of precious metal, such as gold or silver, or even a pearl (*akchhya*, from *ak* = mouth and *chhya* = food) is placed in the mouth, the corpse being supposed to become "*sudh*," or purified, thereby. Oil is poured over the corpse, and finally branches of the sacred *dhupi* tree, found in the high hills, are cast on the top, and then the whole is fired. No one remains to watch the cremation, but the mourners almost immediately wash their heads, hands and feet, put their caps on and their head-dress (*chuklas*) straight and return to the home of the deceased. Here they purify themselves in the smoke of a fire made of *dhupi* wood and then go to their own homes.

On the following day a few men and women proceed to the burning-place and pull down the enclosure (*rhapa*) and wash the place and remove one of the burnt bones. The men doffing their caps and the women turning their head-dress (*chuklas*) inside out, solemnly bear the bone enclosed in an iron, or tin-box to the place (each village has one or more) of dead men's bones. Here they are met by others, who did not accompany them to the pyre, with parched grain (*pu*) and *sattoo* or moistened flour (*du*) and other things necessary for the coming ceremonial, which is a part of the funeral rites (*dhurung*) which will subsequently at another time be carried out in full. To screen the spot from the vulgar gaze two curtains are erected on both sides of the place, the girls hand parched grain (*pu*) to the men, and then two of them, one with a cup of flour (*du*) and the other with a jug of water, sprinkle on the ground, while the men dig a hole and put the bone with its case into the ground. After this four reed sticks are put up at the four corners, four feet apart, like boundary pillars, and the tops are joined by three threads of different colours, *viz.*, red, white and yellow. Next immediately above the interred bone a forked stick is placed in the ground, and from one arm is suspended a pair of new shoes if the deceased is a man, and a pair of long boots (*baukch*) if a woman; and from the other arm is suspended a gourd full of water. Below the gourd is a plate with flour (*du*) on it covered with *ghi*, or clarified butter, and as there is a small hole in the bottom of the gourd, water drops continually on the food beneath.

That night there is given a funeral feast, and very special provision is made for the soul of the deceased. A stone is placed upon two sticks, these being pushed into the wall outside the house or into the roof outside, and a little cooked rice is put on it, and the elders of the village make special prayer, beseeching old souls, called *yishimis* [*yi* = old and *shimi* = a breast, but in this instance it means the soul of one whose death ceremony (*dhurung*) has been performed], not to appropriate the food for themselves and thus deprive the deceased. Great care is taken to renew the food thrice daily before the family takes its own food, and it is not until the *dhurung*, or death ceremony, has taken place that this giving of food ceases. At the funeral feast of the first night large balls of cooked rice, as big as cricket-balls, are prepared and are distributed (called *rham*) next day by two unmarried girls, each family in the village receiving two. These girls wear, although unmarried, head-dress (*chukla*) which only married women wear, and one of them carries a

basket (*doka*) full of these balls on her back, and it is curious to note that the basket is tied by the very same *am lugara*, or white cloth, by which the corpse was led to the pyre.

From this day onwards up to the *dhurung* ceremony, all singing is stopped among relations, and men may not wear a turban, or a ring on the right ear (the left is immune), nor may they shave, or crop the head ; similarly the girls, who are related to the deceased have to eschew rings on the right hand, and allow two frontal hair-plaits (*tzi*) to hang down on each side of the face, and sometimes they go the length of putting off all jewellery for three years with the exception of a coral wreath and a bracelet. Should the deceased have died far from home, they are anxious to ensure the spirit finding its way across difficult places on the route, and, therefore, when returning home, they lay a thread of wool on the ground to guide the spirit of the deceased. In Chaudans this custom has been given up.

If the deceased has succumbed to some infectious disease such as smallpox, or cholera, the corpse is not burnt, but buried, or is thrown into the water, and in this case no bone is retained except a tooth to be put in the place of dead men's bones. Such a horror have they of leprosy, that if the deceased has been a victim to this dread disease, they simply cast the corpse into the water and retain nothing, not even a tooth.

The distribution of rice-balls to the villagers is an important ceremony, and should the death have occurred at a distance from home they make a point of performing it on their return.

In *pattis* Byans and Chaudans cremation follows death immediately, but in *patti* Darma burning takes place only in the month of *Kartik*, and the corpses are interred in the ground during the interval and are exhumed in *Kartik* for cremation. This is a filthy and most insanitary practice.

Dhurung or Gwan.—The Bhotias of Pargana Darma all speak of the funeral ceremonies as *gwan*, and these rites are still found among certain Bhotias near Jumla in Nepal, who are said to have migrated from *patti* Byans. They were undoubtedty practised in the past by all Bhotias in Johar and Niti and Mana, but at the present time the Rajputs have entirely abandoned the custom, which is only followed in those parts by the Domra Bhotias, and as the people of those parts have also forgotten the Bhotia language they have applied the hill-word *dhurung* to what is universally known as *gwan* in the Bhotia language. The origin of these rites and the practice of cremation is prettily told in the common story which all Bhotias tell: An old man in days long gone by, when the world was young, lost his only son, and in his agony of grief determined to go even unto heaven to plead for the life that had been taken from him at the feet of *Miyar Misru* (*Miyar* means heaven) the god omnipotent, creator of all things. He arrived in time to see that *Misru's* own son, his only son, had just died also, and he witnessed the cremation and other ceremonies that were done in heaven, and *Misru* told him that when death did not spare him the omnipotent what could he do to assist terrestrials. Returning to earth the old man taught the Bhotias all that he had seen, and henceforth they followed the heavenly ritual, only substituting stone for gold in the cremation enclosure (*rhapa*), wood for silver in the bier, and wood for silver in the fuel of the pyre.

In Byans and Chaudans there is only one *gwan* ceremony for the deceased, and it

can take place either in June for those who have died during the preceding eight months, or in October for those who have died since the June ceremony. In *patti* Darma there can be more than one *gwan*, and there are generally two to four, the number depending upon the means of the deceased's family.

As the time for *gwan* draws near, the members of the family summon the village elders to fix a date, and some time during the waning moon is chosen. The interval is spent in making preparations: *jan* or spirit is brewed from rice and barley, and the grain of the *phapar* is parched (*phuru*), and above all things sheep, goats or yaks are sent for from Tibet. In the ceremony of the *gwan* an animal is always made to represent the deceased and is called *ya*. In *patti* Chaudans and half of *patti* Byans a yak is always chosen, and great care is taken to see that its forehead, back and tail are marked with one continuous blaze of white. But in *patti* Darma and the remainder of Byans, the influence of Hinduism has made the people give up yaks (except the Domras, of whom later) on the ground that they are cows, and sheep and goats are selected instead. The selection is left to the spirit of the deceased, which marks its approbation by making the approved animal shake its tail, while the relations throw rice on it. The sex of the animal follows the sex of the deceased. An indispensable part of the ceremony is the presence of a *seyaktza*, who is an old man well-versed in the lore of the future world, and it is his duty to remind his listeners, by the narration of old stories, how the *gwan* and other funeral ceremonies arose, and to instruct the spirit of the late deceased (*nushimi*, *nu* = new) as to the paths it should follow and the dangers it should avoid in reaching heaven. The word *nushimi* is in contradistinction to *yishimi* (*yi* = old) or spirit, whose *gwan* ceremony has been performed.

The ceremony can be performed in four days, but as the ceremonial of the first day has to be performed on a different day by each family of relations in turn, the total number of days depends upon the number of families concerned. Before the first day there is a large amount of bread made by the women relatives and neighbours, and next morning each family in the village receives one loaf in exactly the same way as the rice-balls were distributed (*rham*), the bread being put into the *doka* or basket and the *am lugara* being used as before.

The first day is known as *shin gumo jya*, or wood-collecting day, this being the meaning of these three words in this very order, as large quantities of wood are collected for cooking purposes and torches to be used on the subsequent days. The principal ceremony on this day is known as *ya shammo* or the leading forth and bringing back of the *ya* (*shammo* means go and come back). After a feast of rice the *ya* is taken to a spot outside the village by the relations, who also take with them many kinds of parched grain (*pu*), a suit of clothes and a few ornaments, and having reached the given spot the girls give the men grain (*pu*), and the deceased's clothes are tied by a white cotton cloth on to the *ya*. Grains of barley are thrown on the *ya*, and it is solemnly stated that the *ya* represents the deceased, and old spirits, *yishimis*, are besought not to take the food of the lately-departed spirit (*nushimi*). Then a solemn procession is formedi n exactly the same way as when the corpse was taken out for cremation, *viz.*, the *am lugara*, or cotton cloth, is fastened to the horns of the *ya* and is carried by the girls first with

chuklas, or head-dresses, reversed: these are followed by the *ya*, and last of all come the men with heads bare. On entering the village the *ya* is fed with wet flour (*tzama* corresponding to Kumaoni *uwa*) in a cup and a little spirit (*jan*). Again, on reaching the house of the deceased, the *ya* is fed with rice and liquor (*jan*), and the clothes of the deceased are removed.

The mourners are either *putie* (from *pu* = parched grain and *tie* = with), that is, those distant connections who come only with offerings of parched grain or a little rice and spirits, or *myechame* (from *mye* son-in-law, brother-in-law, uncle-in-law, and *chame* girl), who are sisters, etc., of deceased, or of the husband of deceased, and bring with them a sheep or goat as well as what the *putie* bring. A good deal of food is required for the feeding of the *ya*, and the mourners bring offerings for his nourishment. Should the deceased be a man his mother's brothers also attend and are called *puwahiya*, this expression being never used on any other occasion. These bring sheep and goats, etc., and sufficient rice to feast all the villagers on the second or third day. The *myechame* girls never, if possible, come alone; they almost invariably bring their husbands with them, or some other man whom their husbands delegate, the reason being that they have important duties which are most suitable for men to perform, *e.g.*, to lead the *ya*, or make boots for the burnt bone (*hri*) of the deceased to be placed in. These boots are called ghost-boots, *shimi babch* or *baukch* and are some six inches long, being simply a round cylinder of cloth with a leather sole, the whole very diminutive and very coarsely prepared. Again a tablet of accounts is to be drawn up, written with wet flour on a wooden slate, showing for the edification of the dead exactly how much flour has been used in making cakes (*puris*, Bhotia *ja*). Another duty is to get the sticks for the erection of the dummy figure of deceased and so on—duties most suitable for men to perform.

From the very first day there is continual dancing on the part of the villagers in front of the house where the *gwan* is taking place, and they are fed with rice or *puris* (*ja*). The second day is known as *ya kummo jya* (*kummo* meaning to go and come back), and closely resembles the first day, the *ya* being taken out and clothed and led back in exactly the same way, the only difference being that on the first day all the villagers go, and on the second, only the near relations. On this day rice is boiled (*ya chhaku* or *ya kum chhaku*, *kum* being connected with *kummo* above and *chhaku* meaning boiled rice), and is given both before and after the leading ceremony to all relations.

The master of the ceremonies is called *Chhangma*, and needless to say that his principal work is to see that there is no lack of the "barley bree" and that there is plenty of good fare for all. He sees that proper persons are set apart to make the *shimi babch* or ghost-boots, and the frame for the dummy figure, and that fuel wood is collected; and, in fact, that everybody has something to do.

The third day is *zam kummo*. In the early morning all the villagers go to the deceased's house; the men receive a little *sattu* and liquor and their wives two cakes (*puris*) each, and then they take the *ya* and go to the place of dead men's bones (*ya shyam*) where deceased's bone is lying in the casket. Great care is taken to insure privacy by again putting curtains on both sides while the case is being taken from the ground, and when extracted the case is immediately placed inside the ghost-boots, which have been made

during the preceding night. After this the procession wends its way exactly in the same way as on the first and second days. As it enters the village, the *ya* is fed by everybody with rice and liquor, and the relations actually escort it to their own houses and feed it there, and the *myechame* man who leads the *ya* comes in for his share of good things. The men at the end of the procession discharge fire-arms as they move along, and throw grain (*phuru*) over the *ya*. The final feeding is at the house of deceased, where outsiders first give it food, and then, lastly, the family members. After this the clothes are removed and conveyed inside the house with the bone in the ghost-boots. Here a dummy figure, resembling the deceased, is prepared by pushing three sticks into a reversed basket, the sticks being wide apart at the bottom and joined at the top. As one stick is longer than the others, it serves for the neck and head. A fourth stick fastened at right angles makes the arms. Over all these the clothes are placed and a rough representation of the deceased is made. The four walls of the room are hung with clothes of every description on ropes going from corner to corner (*chandan*). The *seyaktza* who is versed in the knowledge of the future world is seated by the figure, and forthwith begins his stories of the ghost-world and tenders his advice to the departed soul as to the dangers of the road that have to be encountered; nor must the old man relax for a moment in his duties during the whole of that day and all that night, be sleep never so oppressive.

The practice in Chaudans is slightly different, as the figure is made in a field, and one field is set aside for the use of the whole village: the bone, however, is kept in the house, and the *seyaktza* watches over it till midnight.

All the relations of the deceased bring balls of rice which they place in front of the dummy figure: these are kept for a while and are finally thrown away outside the village, together with the tablet of accounts and the stone on which the spirit's daily food has been placed. A place is set apart in the village (called *mabang*) where all the villagers dance during the *gwan* days, and where they receive cakes (*puris*) on this the third day. Then comes the weird ceremony of the formal dance executed by all the men of the village (they are called *garkhal*) in a long row. They come dancing up to the deceased's house and are feasted, contributions of food being levied from all relations, if the people of the house are not rich enough to incur this expense. The feasting is called *garkhal chhaku* (rice). As this dance proceeds metal dishes and cooking-utensils are taken out of the house and beaten by the men, while the girls carry torches in their hands; and finally all resort to the *mabang*, where the dancers go round in one direction and the others in the opposite direction beating the vessels and holding torches, and throwing different kinds of parched grain (*pu*) and little pieces of cloth. This ceremony is called the *garja pashimo*, the latter word meaning to go round; and after this the men do not doff their caps to the dead.

The last day is *ya pongmo* (rooting up of the *ya*), on which they get rid of the spirit of the deceased. The venerable *seyaktza* having finished his last words of advice to the soul, the clay figure is taken out and the clothes removed and put on the *ya*, the wooden frame being cast away, and a *myechame* man leads forth the *ya* to a distant spot from the village; and, on this occasion, all the villagers beat the poor victim to drive it away, and

chase it to prevent return. In Chaudans it is allowed to roam free on the mountains, but elsewhere low-caste Bhotias or Tibetans speedily despatch it and eat the flesh. So pleased are the villagers that the spirit has departed, that they return singing and dancing and distribute amongst themselves cakes with little ears attached (*puris*). This is called *rhashimo*, from *rha* clean, *i.e.*, purification. Men and women shave, cut their hair and wash their heads and wear rings on their ears and hands. As to the bone, half is taken and buried in some lofty spot, and the other half is taken to some sacred place such as Kailas or Mansarowar by one of the household, who remains unkempt until he has deposited the bone in its final resting-place. Each of the mourners gets either some cloth or a vessel as a present. Formerly, in patti Darma, if any onlooker wished his descendants to note that he desired his own obsequies to be performed on a magnificent scale, he blew a trumpet and announced the fact publicly, and woe betide any heir who failed after that to do all honour to the spirit of the deceased. A widow throughout the whole of Bhot leaves off all jewellery for a year or more, and also the *nath* (nose-ring). If she marries again she reassumes the nose-ring (*nath*) A widower does not now, in any place in Bhot, leave off the loin cloth (*langoti* or *dhoti*) or any other garment, as noted in the Gazetteer. In former times monuments and images used to be made in honour of deceased persons, and can still be seen in Chaudans, but they are not made now.

Religion.—It has been already described how the Bhotias erect *saithans*, or shrines, for their gods, but most frequently we find a simple stone, and by it a *darcho* (a tree-trunk with a few branches left on the top) fixed in the ground with strips of cloth (*daja*) floating in the wind tied to it. The general form of worship consists in the cooking of *puris* (cakes) or rice, and preparation of *dalangs*, which are offered with liquor. Small pieces of the food are broken off and thrown with both hands towards the seat of the god; bits of cloth are torn up and similarly thrown; the liquor is sprinkled with two pieces of grass, one in each hand, towards the same spot; and sometimes the worshippers offer burning lights. Meanwhile a man brings water in a *lota* or glass (called *rhati*, from *rha* pure and *ti* water) and puts into it an old coin, which must on no account ever afterwards be spent; and also a sprig from the *dhupi* tree, part of the sprig protruding from the glass. Fresh *dajas*, or strips of cloth, are tied on to branches and put over the *saithan*, and prayers are offered. Goats and sheep are often slaughtered in numbers, and the ceremonial is as follows: A man sprinkles water on the animal, and as soon as it shakes its body to throw off the drops, everyone realizes that the deity has accepted the sacrifice, and immediately its hair is pulled out in tufts and thrown towards the shrine, and then the animal is despatched. Fresh blood is taken from its breast by tearing open the skin, and is sprinkled on the *ling* which is inside the shrine, and the horns are cut off and placed on the shrine with some of the brains mixed with rice placed between the horns. Removing the skin, the liver, diaphragm and lungs are taken out reeking, and are carefully examined by the diviners for portents as to the future. The art of divination is in great request, but diviners are few, and amateurs are chary of meddling with the terrible possibilites of the unknown. These rites are faithfully carried out before the annual exodus to the lower hills and on return from below to their homes, and also at *shankrant* in the month of *Bhadon*. Formerly the liver was torn from the living animal, but at the present

time this barbarous custom has been given up, and the internal portions are only removed after death, but while they are still reeking hot; and many animals are slain before the desired signs are apparent.

The *Bhotias* are a most hard-working, practical race, and yet they are most superstitious. They are always at work, both men and women, and in their idlest moments, for example at the *rambang*, they are still making thread for weaving, and in all their business they are most capable and clear-headed—still this is the race that is in the clutches of a superstition that saps the very life-blood. They attribute all sickness to evil spirits; they place an axe at the door of a house where anyone is seriously ill; when they take a sick man to see a European doctor they fasten a sickle round his waist to fend off the evil one; a returning traveller, before entering his village, confines thorns and nettles under stones, thinking that in this way he has laid the evil spirit; and this practice is common at the heads of passes, near dangerous bridges, or in difficult places. For the cure of sickness these people resort to burning and bleeding in a manner that makes the civilized beholder sick to look at, and these barbarous remedies are made more effective by incantations. They no longer believe that a thunderstorm will take place if they rub their metal vessels clean with earth in the usual manner (a belief that at one time made the inhabitants of *patti* Darma notorious for their filthiness, for they cleaned their vessels on their wearing apparel instead, and never washed themselves or their garments); but they do believe that they must fire off guns to prevent the blacksmith (*kaliya*) from seizing the deities of the sun or moon at the time of an eclipse, and their other beliefs are on a par with this. They worship at all the Tibetan monasteries in the same way as the Tibetans, and they consider the Tibetan places of worship very sacred. They worship the same deities that they find the Tibetans worshipping when they make their trips for trade purposes into Tibet, and they worship their own deities and also the whole host of Hinduism, or rather, to be accurate, all those that they have heard about, for they are only dimly initiated into the mysteries of the Hindu faith in the supernatural.

Each village has a deity of its own, and each *patti* has its own favourites, but the deity *Gabla* is universally worshipped with offerings of goats, sheep, *dalangs* and rice (*sherje*) as being the most powerful, and his votaries resort to him for removal of rain or snow, or with prayers for success in business, or similar matters. Similarly the goddess *Nyungtangsya*, or water-goddess, is everywhere worshipped; one particularly sacred spot being Kalapani, where the river Kali, also known as the Sarda, is supposed to have its source, the object of the worship being to ensure a perpetual flow of the water. *Puris* are made and offerred upon her *saithan*.

In all villages we find tree-trunks with branches (*darcho*) placed in front of houses and at *saithans* with flying streamers (*daja*), to propitiate the local deities on occasions such as the house-warming of a new building or when there has been trouble, the poles being placed in the ground at the beginning of the new month. When Bhotias leave their homes to trade in the warmer south they place baskets, just like waste-paper baskets with the bottom knocked out, full of thorns and twigs, on the courtyard walls of their deserted homes, to preserve the empty tenement from unwelcome guests of the spirit world.

In the village of Kuti we have the god *Gulach*, and in Nabi the god *Thakpung*: the

people of Gunji worship the goddess *Namti*, who corresponds to *Debi*, and definite rules exist as to the quantity of the offerings, *e.g.*, every four men must provide one sheep, but if the group is less than four, then every two men must provide one goat. The inhabitants of Chhangru have their own deity. This village is just across the border in Nepal, and is therefore politically Nepalese, though physically it should be British, together with the village of Tinkar, as these two villages are cut off from Nepal on all sides by impassable glaciers. The deity *Madeu* watches over the safety of Chhangru and holds the place of a village watchman in the popular estimation. At a time of drought or excessive rain, the inhabitants of Garbyang turn to Kungr, and offer him wet flour, or dry flour, on his *saithan*, according as they desire the rain to stop or come on.

But the most potent deity of all in the estimation of the people of Garbyang, Budhi and Chhangru is *Namjung*, the name being taken from a mountain on which can be distinctly seen two stone figures from a great distance: the mountain is called Sunpatti Shoka. The figures are sitting, and the story is that a *shoka* went to carry off a girl to be his wife, but to avoid matrimony the damsel hid herself and was frozen to death. He searched for her and eventually met the same fate. This deity is principally worshipped for the prosperity of the eldest son at the *barani* or *barai* ceremony described above.

The men of *patti* Chaudans place their faith in *Shyangse* as the most powerful god, and hold an annual festival *shyantung* in his honour. No particular date is set apart for this festival, but it generally takes place in *Asauj* or *Kartik* (end of September or beginning of October). Goats and sheep are not sacrificed at the *saithan*, but at the homes of the villagers.

In *patti* Darma the noble group of the Panchachuli mountains dominates the minds of the inhabitants, but they are known locally as Miyula, and the goddess on the summit bears the same name. The mountains in this part of Bhot are particularly awe-inspiring, and the only pass Neo Dhura leading to Tibet is so dangerous on account of glaciers, that all traders fasten a long pole across their bodies to preserve them if they fall into the crevasses when they journey across these forbidding heights. It is not surprising, therefore, to find that *Chan* is worshipped for mountain-sickness, when a man faints from the rarified air, and the offering takes the form of covering a goat with red earth, and either killing it or letting it loose to wander at will in the mountains: undoubtedly there is implicit faith in the efficacy of this offering.

There is a dual deity *Kibang Rangchim* who is both male and female, the one name signifying the former and the other the latter. The god is usually represented by two stones, and worship takes place between the two.

Apparently there is only one deity *Nungtang* who is worshipped solely by women among these Bhotias of pargana Darma, and the worship takes the form of offering sticks with streamers one inch broad and a foot long attached to them. It is a very pretty ceremony and is supposed to be of special avail for sore eyes, or when a patient is suffering from the evil influence of a god.

Domras or *Dumras*—The low-caste Bhotias are composed of blacksmiths (*lohar*), drum-beaters (*hurkisa*, from *hurka* a drum), *dholi*, from *dhol* a drum, carpenters (*odhs*), basket-makers (*bajelas*), tailors and shoe-makers (*bhools*) and others. They only intermarry

amongst themselves, and their customs throughout Bhot are similar, bearing a general resemblance to Darma customs. In the funeral ceremonies (*gwan* or *dhurung*), which they practise on the lines of the Darma Rajputs, they generally use a buffalo, which in some places they finally chase and kill with stones, sticks and knives, and in others, like Chaudans, they call in their fellow-castemen from the next village, and exhort them to kill the victim, and insist that death must be with one blow; otherwise, if the animal dies by a torturing death, they threaten that, on a future occasion, they will also torture in their turn the funeral victim of the other villages. The *dhurung* in Mana is only practised below Joshimath, and persons go that distance to perform it. The Dumra Bhotias do not give gifts to Brahmans, and they consider the sister's son to be the family priest, in fact they do not resort to the Hindu hierarchy.

Huniyas—The Huniyas derive their name from Hundes, the portion of Tibet opposite the Almora and Garhwal districts: they are Bhotias in the meaning attached to that word outside the Almora and Garhwal districts: they are also called Khampas, Bidesis and Jarhs. They intermarry with each othor but not with Bhotias, of these districts, who do not apply the term Bhotia to them at all. The Bhotias, however, eat from their hands and with them. They are really Tibetans and intermarry with Tibetans. They are Buddists but also worship the deities of Kumaon. They eat the flesh of the yak, but sometimes profess not to do so in British Territory, such is the influence of Hinduism, the yak being considered a cow. They practise polyandry, but only the brothers, and they true brothers, resort to the same woman as their joint wife. Some wear pig-tails, and some *chutiyas*, and some wear neither. Again some cut their hair and others do not.

Trade.—No account of the Bhotias can be complete without a notice of their trade, for they are traders from childhood, with the exception of the Jethoras. In the past the cardinal principle to be remembered has been that the Tibetans will only trade in these parts with those persons with whom they can eat. There are exceptions, *e.g.*, the Duryals in Garhwal, who are the descendants of Brahmans and Chhattris, and the inhabitants of Pangla in Chaudans, have been allowed to trade, although they are not Bhotias; but the general rule is certain, *viz.*, that as the Bhotias alone can eat with the Tibetans, they alone can trade with them. Another rule has been that trade can only take place through what is known in the business world as "house-connections." Formerly, so far was the custom pressed, that only certain Bhotias could go to certain marts, but time had already broken down this restriction to a great extent, and although there have been difficulties yet there has been also a much greater freedom. Taklakot or Taklakhar, known as Purang by the Tibetans, has led the way, and trade has been possible there even without a "house-connection," although the drinking of tea has been a necessary part of all business. Now the Treaty of Lhasa, of 1904, has introduced free trade and changed the old order of things.

The trade figures are as follows in rupees:—

		1901–02.	1902–03.	1903–04.
British Garhwal.	Native Garhwal	55,000	78,000	27,000
	Mana over the Mana Pass, called Tunyi-la by Tibetans	33,000	37,000	43,000
	Niti over the Niti Pass, called the same by Tibetans	1,63,000	1,42,000	1,31,000
Almora.	Johar over the Untadhura Pass, Tibetan Kyunamla	3,05,000	4,21,000	3,92,000
	Pargana Darma—			
	1. Over Lipu Lekh Pass, Tibetan Jang Lhaula			
	2. Mangshan Pass, Tibetan same ...			
	3. Lampiya Kuti La, Tibetan same ...	5,76,000	4,98,000	4,87,000
	4. Neo Dhura (for *patti* Darma) Tibetan Nooi La or Shekhu La ...			

Of this about four lakhs go over the Lipu Lekh Pass, which is a very easy one. In 1841, the trade over this Pass was only Rs. 35,900, showing that the trade has increased since then elevenfold. Meanwhile, over the Johar Pass trade has, in the same period, increased only $2\frac{1}{4}$ times. A further point of interest is that, between 1872 and 1902, the population in Johar has increased 13·75 per cent., and in Pargana Darma 93·12 per cent. About 80 per cent. of the trade of the United Provinces goes through the Almora District. The wonder is not that the entire trade is so small, but, considering the execrable routes, that there is any trade at all. The principal imports are borax, salt and wool, and exports grain, sugar and piecegoods.

This Memoir does not enter into points of similarity and dissimilarity between this interesting people and the Tibetans living immediately across the border; nor does it treat of the past commercial political history of the Bhotias, all of which subjects amongst others are treated at length in "Western Tibet and the British Borderland," by the present author.

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RELIGION AND CUSTOMS OF THE URAONS.

BY

THE LATE REV. P. DEHON, S.J.

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Religion and Customs of the Uraons.

By the late Rev. P. Dehon, S.J. *Communicated by* E. A. Gait, I.C.S.

[Read July 5th, 1905.]

[Owing to the sudden and lamented death of its author, this paper has not received revision in proof at his hands. It is published, but for the addition of a table of contents and for very slight omissions, as he left it. No one was better qualified to speak of the Uraons than Father Dehon. *Born in Belgium in 1856, he came to India in 1883 as a member of the Society of Jesus. He was ordained priest in 1888, and commenced his career as a missionary shortly afterwards. He was in charge of the work in the Noatolli district for about three years, and in 1895 founded the station of Mahuadand in the Chechharri, where he laboured for the remainder of his life. It was while returning to this station, in spite of poor health, that he died at Rajhara on June 27th, 1905.—Ed.]

Introduction.

The Uraons or Oraons, or, as they call themselves, *Kurukh*, are a Dravidian cultivating tribe of Chota Nagpur. Their traditions say that their original home was in the Carnatic, whence they went up the Narbada river and settled in Bihar on the banks of the Sone. Driven from Shahabad by the Muhammadans, the tribe split into two divisions. One of these followed the course of the Ganges and finally settled in the Rajmahal Hills, where their descendants are now known as *Ma-le;* while the other ascended the Sone into Palamau, and, turning eastward along the Koel, took possession of the north-western portion of the Chota Nagpur plateau. They still speak their own tribal language, a dialect of the Dravidian family which, according to Dr. Grierson, is more closely allied to Canarese than to any other Dravidian language spoken in the South of India.

The number of persons enumerated in Bengal under the head Oraon at the census of 1901 was nearly 600,000, of whom about half were in the district of Ranchi; and there were in addition nearly 60,000 Christian converts of Oraon origin. About 20,000 members of the tribe were found at the same census in Assam, whither they had gone to work as coolies on the tea-gardens.

A general account of the Oraons will be found in Dalton's *Ethnography of Bengal*, and they are also described by Mr. Risley in the *Tribes and Castes of Bengal*. The following interesting notes by the Rev. Father Dehon deal mainly with their religion and customs and contain much information on these subjects that has never previously been published.

E. A. Gait.

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* [These particulars are derived from the *Catholic Herald of India* for July 5th, 1905.]

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I.

Etymology of the Name.

The etymology of the name is most obscure. Can it be derived from Rawana whom they consider their first ancestor? They call themselves *Kurukh*. Some say that they emigrated from the Konkan, with which they connect the term *Kurukh* ascribing the divergence between the two words to their own partiality to guttural sounds. It seems, however, that the original meaning of the word was "hill man."

The emigrants to Assam, Bhutan and Calcutta are called *Dhangars*, which simply means "contract labourers," as will be seen in the explanation of the word later on.

The Hindus and Muhammadans among whom they live, give them the nickname Kol, though they are of Dravidian origin.

Origin of the People.

All that they know about their origin is that the name of their first ancestor was Rawana, a famous king who lived in the South. One of their legends which they recite when offering a kind of sacrifice to *Dharmes* (God) (see *Pal-khansna*) seems to be only a mutilated fragment of the old Hindu legend about Ram, Lachman, and Sita, when Rawana, the King of Lankapur runs away with Sita, Ram's wife. This might perhaps throw some light on the subject, though it is a very doubtful hypothesis. The only more or less general tradition they have is, that, after much wandering they at last settled at Ruidas, where they built a fort to protect themselves against the attacks of the Hindus or Muhammadans (they don't know exactly which), but they are convinced that the fort was built by them. They were victorious in several encounters, but once on a feast day they all got drunk. At night the enemy came, captured the fort and cut them to pieces. Some, however, managed to escape, and as they were pursued divided themselves into two parties. Some fled towards Palamau, whilst the others directed their course towards the Rajmahal hills and now form quite a separate tribe, the Malé. The first party, most probably finding Palamau too hot a place for them, did not settle there but crossed the

hills towards Lohardaga and found themselves among the Mundas. The hypothesis that they were allowed to settle among them is likely to be true, and for anyone who knows these two tribes, there is nothing astonishing in the fact that the Mundas retreated slowly and left the new-comers in possession of the country. Even now we witness the whole process as it must have been going on in former times. In new countries where land has been only recently reclaimed from the jungle, the Uraons settle, and, as they are an exceedingly prolific tribe, they soon become the preponderant element, whilst the Mundas, being conservative and averse to live among strangers, emigrate towards another jungle. The Mundas hate zemindars, and, whenever they can do so, prefer to live in a retired corner in full possession of their small holding; and it is not at all improbable that, as the zemindars took possession of the newly-formed villages, they retired towards the east, while the Uraons, being good beasts of burden, and more accustomed to subjection, remained. Of course this is only a hypothesis, as there is not the least scrap of documentary evidence to help us to solve the problem; but its likelihood is increased by the position of the Bhuniyars, whom Colonel Dalton in his most valuable book calls Bhunhiers. There is not the least shadow of doubt about the Bhuniyars: they were the first settlers in Barway, Chhechari and Sirguja, hence their name Bhuniyars, which means "first settlers." Look at the map of Chota Nagpur, and it will be seen that Barway, Chhechari and Sirguja are separated from the country first occupied by the Mundas and Uraons by a chain of hills and *pāts* running from Palamau to Palkot. Well, these Bhuniyars are only the descendants of a few Mundas who had crossed the hills and settled in Barway and Chhechari. This is proved by their similar traditions, the tombstones which are exactly the same as those of the Mundas, the similarity of their customs, and the names of some villages. Is it not very likely that, as the Uraons increased in number, they spread from the side of Lohardaga towards Palkot, whilst the Mundas retreated and left their brethren of Barway and Chhechari separated from the main body? By degrees also the Uraons emigrated from Kukra, crossed the mountain and came to settle in Chhechari and Barway where the same process takes place. The Uraons take possession of the low lands, whilst the Mundas retire to the small plateaus or high lands on the mountains. Colonel Dalton speaks of the Bhuniyars as being a different race and does not know how to classify them; but for one who has lived a long time among them there is no doubt at all. Some old men of Barway still remember that when they were young, their fathers were still in communication with the Mundas of Nagpur. The Bhuniyars of Sirguja being the farthest away from the Mundas are known only by that name. In Chhechari is the transition stage, and they are called Bhuniyars or Mundas indifferently, whilst in Barway, where they are the nearest to the old stock, they will only accept the name of Munda. Now that their relations with the Mundas have ceased and they have lost their language, and have moreover abandoned the local traditions and gods of the Mundas, they are likely to form a different caste. Up till now they affirm that when they go to Nagpur and explain everything to their *bhais*, they are looked upon as being of the same caste; but they do not intermarry. This digression about the Bhuniyars seems to take us away from the Uraons, but it shows the likelihood of the hypothesis explaining the process by which the Uraons took possession of the

country, and serves to rectify what Colonel Dalton wrote about the Bhuniyars. (See Dalton's *Ethnology of Bengal*, p. 133.)

II.

Religion of the Uraons.

The religion of the Uraons is a mixture of the old practices and ideas they have brought from the south, with the new practices and ideas they have adopted from the Kols, and the different tribes among whom they live. It would be difficult to separate the old practices from the new ones and draw an exact line between what is entirely of Uraon origin and what has been borrowed by them from other people. However, this can be ascertained to a certain degree of exactness.

The mythological faculty of the Uraons consists of three doctors.

1. The *panch*. As the *panch* plays a great rôle among the Uraons it is well to know exactly what it means. According to the etymology of the word it should mean a body of five men; but it is not so. The *panch* is the whole community represented by its eldest members or represented by the *sankatalas*.

2. The *pahan*, or *baiga*, or village priest.

3. The *ojha*, or *mati*, or *dewair-Augurer*, conjurer, sorcerer.

Within the province of the *panch* represented by the *sankatalas* lie the old traditions of the tribe.

The *pahan* or *baiga* is in charge of the tutelary divinities of the village, and he has to officiate at the chief feasts. He acts for the community.

The *ojha* is in charge of the *bhuts* or devils: he has to find them out and drive them away. For the ceremonial part of their cult three men might be added, namely: (1) the *panbhara* or acolyte who helps the *pahan* in his different functions. (2) The *pujar* or *vice-phan* who sacrifices to the *bhuts* in the great feasts and takes the place of the *pahan* when he is absent. (3) The *sokha*, who, though being a man *sui-generis*, and having nothing in common with the religion of the Uraons, is the head sorcerer to whom they have recourse to find out witches.

In connection with the religious practices, the *Nagmotia* or snake conjurer, and the *onrha* or *ottonga* who offers human sacrifices might be added.

All these, the *panch* or *sankatolas* being excepted, are the same for all the aboriginal tribes living in Chota Nagpur; so that all, except for a varying number of peculiarities, have the same religion. It is remarkable that in all that is purely of Uraon origin, any man who knows the ceremonies can officiate, whilst in what is common to all the tribes, only the elected representative can perform the ceremonies.

Within the province of the *panch*, that is, all that appertains to the old Uraon traditions, we have—

1. The worship of *Dharmes* or God.

2. ,, ,, ,, *Baranda*—the avenging angel.

3. ,, ,, ,, *Chigri Nad*—the spirits of the Asur women whose husbands were destroyed by Bhagwan.

4. The cult of their ancestors.

Worship of God.—There is no doubt that the Uraons have a more perfect idea of God than the other tribes. They call him *Dharmes*, viz., "the beneficient one," and look upon him as their creator, but they have a very poor idea of his providence. He is far above everything, and has given the management of the world into the hands of tutelary divinities and *bhuts* or devils whom they have to propitiate. As there are bad men and good men in the world, and God does not interfere, so there are good and bad divinities whom God leaves quite free to act as they please. Of course, the intercourse of the Uraons with the Kolarian tribes has spoiled, to a certain degree, their first idea of a supreme and almost immaterial Being. With the Kols the Godhead is nearly identical with the sun. The word for God common among them and the Hindus is *Bhagwan*, and it is remarkable that the words *Dharmes* and *Bhagwan* seem to have different meanings for the Uraons. When they use *Dharmes* the idea of God is entirely separated from the sun, whilst when they use *Bhagwan* they naturally look to the sun as the Kols do.

The Uraons invoke God in their greatest difficulties, and especially when having had recourse to the *pahan*, *ojha* and *sokha* they have found everything useless; then they turn to him and say: "Now we have tried everything, but we have still you who can help us." They sacrifice to him a white cock. They wash the feet of the bird and cut its throat with a knife, saying, "God, you are our creator, have mercy on us." This sacrifice of a white cock to God is offered at all the feasts and when the sorcerer drives away the *bhuts*.

Here we come to what seems to have been the most ancient form of worship among the Uraons. They look upon God as being too good to punish them, and therefore they do not think that they are answerable to him in any way for their conduct; they believe that everybody will be treated in the same way in the other world. Everybody will be reunited to his ancestors, and everything will go on in the other world nearly as it does in this. Only everybody will be happier. There is no hell for them, no place of punishment. They say they go to *Merkha* which corresponds to heaven. The Red Indians speak of the happy hunting-grounds and the Uraons imagine something like the happy ploughing-grounds where everybody will have plenty of land, plenty of bullocks to plough it with, and plenty of rice-beer to drink after their labour. Hence they have no anxiety at all about their future life, provided that they conform to all the customs imposed on them by the *panchayat* of the other world, which they personify under the name of Nasre. All their anxiety is about this world, and all their religious practices tend only to worldly things, namely, to get good crops and be free from sickness. It seems that the Uraons at first attributed all the evils of this world to the evil eye and evil mouth. Hence their most ancient practice of the *palkhansna*. The believe that envy distils from the eye and mouth of the envious man a kind of poison most fatal to crops and men. Let a man but come, stand before their field and look at it and say: "What a beautiful field it is, most promising," and it is enough to throw the master of the field into the greatest anxiety. Let a big official come into their country or any notorious stranger; if his visit is followed by some misfortune, the failing of the crops and especially the sickness of children, these misfortunes will infallibly be attributed to his evil eye. It is really wonderful how much they worry themselves about that evil eye and evil mouth. In this they believe God interferes, and they have recourse to him in the *palkhansna*, i.e., the breaking of teeth.

Palkhansna.—This is the work of the *Sankatalas* representing the *panch*. This is not done on behalf of the community, but simply for the benefit of an individual and his family, to counteract the effects of the evil eye and evil mouth on man, animals and fields. This ceremony is performed in every house twice a year in June and at the feast of the *Kaṛam*, but everybody according to his devotion can have it performed as often as he wishes. The *sankatalas* being called, the house is swept and besmeared with diluted cow-dung. He then takes his seat in the middle and draws first a figure more or less in the form of an egg, and then along the circumference seven small half circles to represent the seven parts into which the world was divided (figs. 1 and 2). The big circle represents the rainbow or God's granary. As they have only three words in their language for the series of colours, so they use only three colours to represent the rainbow. They use the red dust of the burnt mud of their hearths or *choolhas*, the white flour of the yeast they make use of in making *hanria* or rice-beer and pounded charcoal in this shape.

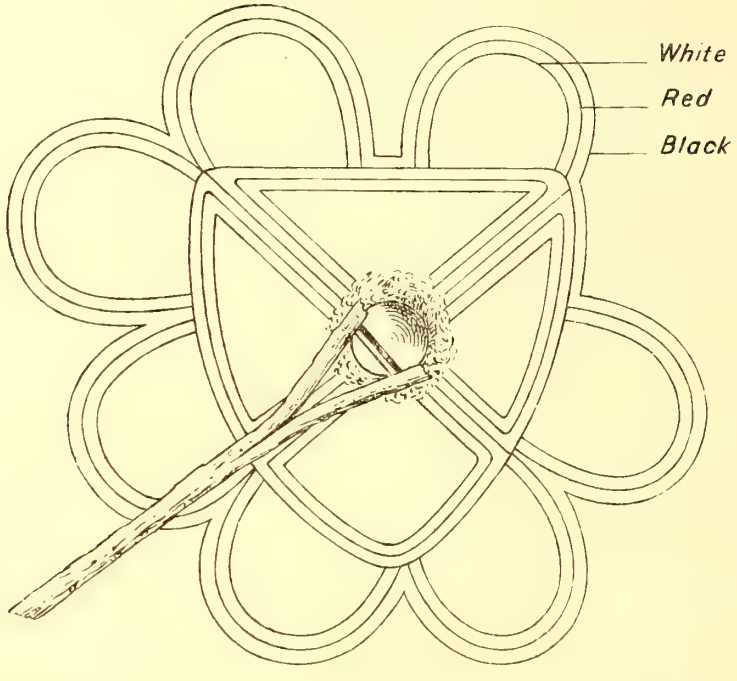

Fig. 1.

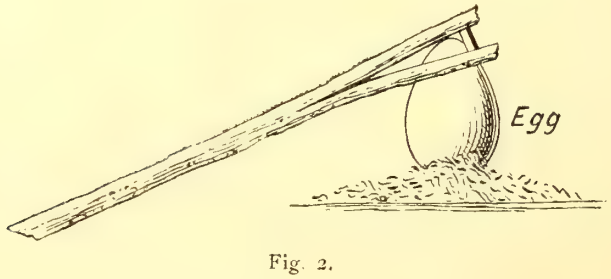

Fig. 2.

In the centre the officiating man puts a handful of rice, on which he places an egg, and having cut two twigs of the *Keont* tree, he joins them in the form of an angle. Sitting then with his face towards the east, he draws two intersecting lines with

diluted cow-dung, and in one of the angles formed by these lines he puts five small pieces of wood representing the *panch* or *panchayat* of the village. He then puts on the egg the angle formed with the two twigs of *Keont* and begins to sing two chapters of what seems to be their Genesis. Here is a literal translation of it :—

" The world, having been devastated by fire, began to look like copper. The smoke was ascending to heaven. Hanuman was the nephew of God. God told him : ' Be on the watch, and when half of the world is burnt, sound the drum to give the alarm.' The baboon went on a *keont* tree and was so absorbed in eating the fruits that he forgot the order. Suddenly the flame reached his hind quarters, he got burnt and clapped his hands *loco dolenti* and then rubbed his face with them. From that time, the wound never got cured and his hands and face are black. *Dharmes* (God) was very fond of him, and when he came to apologise, he did not upbraid him but simply said : ' O nephew, what can be done now? The world is burnt, go eat whatever fruit you can find ! ' But Sita, the wife of *Dharmes*, said to her husband ' Now that the world is burnt, go and every day run over one of the seven parts into which you have divided it and see if you can find any bird or crow.' For six days *Dharmes*, day after day, went over a new part of the world, and for six days his wife for his meals prepared only lac mixed with water. After the sixth day *Dharmes* having found nothing, declared himself helpless, caught his head between his hands, and began to sob. Then Sita told him : ' I knew what was going to happen. That is why I entreated you not to set the world on fire, but you would not listen to me and listened to your nephew the baboon.' Whilst the world was on fire, Sita had hidden the first man and woman (*bhaiya* and *bhayin*) in a fold of her garment. After that she took them out and hid them in a crab's hole in the rushes that were growing in the Sira Sita paddy-fields of Okasi Putrungi. There, as it was the only part that had been spared by the fire, they were eating whatever they could find. On the seventh day of *Dharmes*' wanderings Sita told him : ' Now you have wandered over six parts of the world ; you say that there are seven parts, go then to-day and see the seventh part ! Then *Dharmes*, having put on a flowing long *dhoti*, went to hunt with a common hawk— not a *Kohi*—perched on a wand of silver and gold. He took with him also his bitch called *Lille bhuli khairi*. On that day he found unmistakable signs of man. On that day Sita had prepared for his dinner *arwa* rice and *urid dal*. When he came back, he told her : " To-day I have found unmistakable signs of man." The next day Sita said to him, " Now, go there again to-day." He started again, having put on his long *dhoti*, with his wand of gold and silver, on which sat a common hawk, not a *kohi*, and accompanied by his bitch *Lille bhuli khairi*. When he arrived near the rushes, *Lille bhuli khairi* began to wag her tail and Dharmes was ready to let fly his hawk. Suddenly the first man and woman started from a bush and in a fright began to shout : " O grandfather, O grandfather, look ! Your dog is going to bite us." Dharmes immediately called back his dog and said : " My grandchildren, don't be afraid, don't run away ! I was just looking for you." Then he wrapped both of them in his long flowing *dhoti* and went home. Sita was waiting for him on the threshold, one foot inside the house and one foot outside, with a *lota* of water in her hands. She hastened to wash his hands and feet and at once asked him : " Did you find the grandchildren ? Come, come show them ! Where are they ?" Then

Dharmes said, " Yes, to-day I have found them. Here they are." He unfolded his *dhoti* and showed them to his wife, who at once cleaned and washed them and took them inside. On that day Sita gave a good dinner to Dharmes and prepared *arwa* rice with *rahar dal*. Then, the *bhaya bhayin* (first man and woman) asked Dharmes, " Grandfather, what work are we going to do ?" He told them to go and cut wood to burn on the ground and prepare it for cultivation. At that time there was nothing like day and night, there was day the whole time.

When Dharmes went to inspect their work, he found that they had been very busy and had cut great heaps of wood. Then Dharmes, seeing the different heaps, asked them, " What day's work does this represent ? On what day did you cut that ?" and so on. They always answered, "To-day, to-day." Dharmes saw that this would not do and made day and night. From that time when night came they used to go home, where Dharmes gave them something to eat. At night they slept with the trunk of a tree between them, the man on one side and the woman on the other. After some days Dharmes went again to inspect their work, and seeing the different heaps of wood asked them, " What day's is this ?" They answered, " To-day's." And that, " What day's is it ?" They answered, " Yesterday's." Hearing this Dharmes said : " Now it is all right." Then he said : " To-day I have made a wonderful discovery for my grandchildren. I found it with the greatest difficulty." Then he gave them *hanria* or rice-beer to drink and told them how to prepare it. When they came home that evening they enquired of Dharmes : " Grandfather, now how are we going to sleep." He told them. " Put a screen of bamboo between you and sleep, the man on one side and the woman on the other." For several nights they did so, but once they put aside the screen and slept together. The next morning they went to Dharmes and told him, " O grandfather, to-night we slept together." Dharmes told them, " It is all right ; you did very well." From that time man began to multiply. They went again to cut wood and prepare the ground for cultivation. When everything was ready, the rainy season came, and they went to Dharmes and said to him, " Grandfather, what are we going to sow." Dharmes gave them some seeds in a gourd. They went and sowed them, and as they were sowing, the seeds were increasing so that they were able to sow all their fields. But as the crops were growing, the rats, grasshoppers and lizards began to destroy them. Seeing this they were discouraged and were wondering what to do. Then Dharmes came and told them how to do the *Palkhansna* with the different lines made of the white flour of the yeast, the red mud of their hearths and pounded charcoal. They did so, removed the spell, and got good crops.

Genesis of the Bhuts or Devils.

The world devastated by fire looked like copper. The 12 brothers Asurs and the 13 brothers Lodhas were busy at their furnaces smelting iron. The smoke ascending to heaven was so thick and suffocating that Ansraj Pankraj Bhagwan's horse (*viz.*, God's horse), got sick and could not eat his corn or drink water. God sent Kerketa Jhagru (a bird resembling the hedge sparrow) and the king crow Mahru to the 12 brothers Asurs and 13 brothers Lodhas to carry his message to them. The Kerketa went first and told them, " O brothers Asurs and Lodhas, keep your furnaces going during the day

and stop work at night. God's horse Ansraj Pankraj is sick and cannot eat his corn." The 12 brothers Asurs and 13 brothers Lodhas impudently answered, "Who is he that forbids us? We won't receive any orders from anyone. We don't recognise any master. Here we are kings and subjects (*i.e.*, we are all equal). This is our own kingdom. Though we work day and night, we eat only hot melted iron, and the effects of digestion are disastrous to our clothes; and still we have to receive orders." They got in a fury and said, "Let us catch the fellow." They rushed upon him, caught him by the neck with their pincers and flattened his head on the stone used by them as an anvil, whilst his wings got reddened with iron dust. Though before that the Kerketa was white, from that time his head is flat and his wings reddish and his cry is *ket! ket! ket!* Having been treated in this way, the Kerketa returned to his master and said to him, "God, I delivered your message to the Asurs, and see how they have treated me! They replied, 'Here we are the masters. In this kingdom we are all kings and subjects; we eat only hot melted irons, &c. &c.; go, we are not afraid of anyone.' See now how they have maltreated me! They have caught me by the neck with their pincers and flattened my head on their anvil."

After this God sent the king-crow and told him, "Go and try to persuade the 12 brothers Asurs and 13 brothers Lodhas to stop; tell them that my horse Ansraj Pankraj cannot eat his corn nor drink water." The king-crow went and said to them, "Brothers Asurs and Lodhas, work during the day and stop during the night! God's horse Ansraj Pankraj is sick and cannot eat his grain." The 12 brothers Asurs and 13 brothers Lodhas got into a rage and gave him the same answer as to the Kerketa; caught him by the tail with their pincers and rolled him in black iron dust; from that time, the king-crow is black and his tail is divided into two parts. The king-crow returned to his master and told him how he had been treated and what they had said. Then God said, "I will go myself." He took the form of a man full of sores and put round his loins strips of the bark of the *Simul* tree and came down upon earth. He went first to the rich and said to them, "Oh, you that are rich will you not keep me in your house?" They answered, "Go, we won't keep you. What! If you were to remain here, our servants seeing your purilent sores would get disgusted and would not be able to digest their food. He went thus to three different houses and got the same answer. At last he went to the house of an old widow and said to her, "Mother, take pity on me and keep me in your house." The old widow answered, "Come in, my son. You can stop in my miserable hut. I have nothing to eat. I get my daily food by working for others, but I will keep you all the same." The old woman immediately washed him and anointed him with oil. The next morning, she went as usual to work and got much more than usual, just as much as she could carry; and when she poured the grain out of her basket she found that it had doubled. Then Bhagaban unhusked the paddy and for two measures of paddy got two measures of rice. This went on for several days. Then the old woman began to suspect him and said to him, "My son, do not steal the property of others. This will bring trouble. I beg of you not to do that. I get my food by working every day: let us be satisfied with that." Bhagwan full of sores answered, "Mother! don't accuse me, I never stole the property of others. I will prove it. Remain here to-day, take two measures of paddy to husk and I will do the same." They did so, and he brought in twice the amount

of rice. When she saw this the old woman exclaimed, "My son, I did not believe it, but now I see."

The paddy began to accumulate in all the corners of the old woman's house, whilst those that were rich before became poor, and from the time that Bhagwan came down to earth, the furnaces of the 12 brothers Asurs and 13 brothers Lodhas began to fall in and they could not repair them. They looked everywhere for a sorcerer to find out the *bhut* who was the cause of the misfortune; but no one succeeded. At last they assembled in council and one of them said, "We have called all the sorcerers of the world and all to no purpose; there is that man full of sores living in the house of that old widow: let us call him, perhaps he will know." Then two or three brothers went and said to him, "Brother, we have come to you on a very important matter. See! our furnaces are entirely destroyed: it may be you know the cause." Bhagwan answered, "It may be I know something about it." Then he began to pretend to look for the omens and said, "Now that will do: light your furnaces and blow." From that time everything went on all right. Some days after Bhagwan went, looked at their furnaces and asked them, "Well now, is it all right?" They answered, "Yes, everything is all right, but what sacrifice have we to offer?" Bhagwan told them that only a human sacrifice would do. They looked everywhere for a victim, but no one was willing to sacrifice himself or his children; they came to Bhagwan in despair and said to him, "What are we to do: we cannot find a victim?" Bhagwan answered, "Never mind, don't fret about it. I am alone in the world, I have no father, no mother, I am full of sores. How long am I going to rot? I am disgusted with life. Since you can find no one, I will offer up myself for you. Build a great furnace and throw me in, work the bellows for seven days and seven nights, and after that bring first water in new earthen pots, cut branches of the mangoe tree, dip them in water and extinguish the fire." They did so, opened the furnaces, and lo! Bhagwan who had gone in alone full of sores came out riding on his horse Ansraj Pankraj loaded with silver and gold. They opened their eyes wide and asked him, "Where did you find all this?" He answered: "In the furnace, of course." Then they said, "In that case, we want to go in also." Then Bhagwan said to them: "Of course you may go in also. You see how much gold and silver a poor man like me, full of sores, has brought out; how much more silver and gold will you not bring out, you who are full of health." Some of them shouted, "We will go, we will go." Bhagwan, however, said this would not do, as, if some went and others remained, there would be a great disturbance when questions of dividing the silver and gold came up. "No," said he, "listen to me: build a very great furnace in which all of you will be able to enter; and all go in." They did so, and Bhagwan called a woman that was pregnant to work the bellows, promising to give her a share of the gold and silver. They went in, and Bhagwan set fire to the furnace and told the woman to work the bellows. Immediately they all began to howl and kick, and the woman got frightened and wanted to stop, but Bhagwan said to her, "Go on, go on, they are only fighting and quarrelling about the silver and gold." The woman worked the bellows for one day and one night. Then when Bhagwan opened the furnace, they found only charred bones. Bhagwan then jumped on his horse and was ready to start, when all the Asur women came and caught the horse by the bridle and shouted, "We won't let you go. Now that our husbands are all dead,

who is going to feed us?" Then God answered, "Well, I had sent the Kerketa and the king-crow to forbid you to smelt iron, because my horse Ansraj Pankraj got sick and could not eat. You did not listen: this is why I punished you. Now I will give you the means to live. Become *bhuts* and your name will be Dehdebi and Dahadebi; and go and live among the Uraons, who will offer sacrifices to you."

Before beginning the recital of these two chapters, the *Sankatalas*, whilst he is drawing the lines, says, "See, O Dharmes, I break the teeth of the evil mouth that the grasshoppers and lizards may not eat the crops, that the fields may yield a good harvest, that the cows and calves and goats and children of.....(here he pronounces the name of the man in whose behalf he is making the *palkhansna*) may not get sick but keep in good health." At the end of the ceremony he repeats again what he said in the beginning, specifying the different castes renowned for their evil eye. "I break the teeth of the Keonts, Kumhars, Ghansis, Dhobis, Chiks, Chamārs, who either on the way to the fountain or in the village may have made use of their evil mouth, that the paddy of this man may not die or be eaten by rats, mice and lizards; that all the people of his house may not get sick but keep in good health."

Here, the *Sankatalas* makes his profession of faith and says, "I agree in all things with the *panch*. I do not know anything of witchcraft. I only utter the words that have been revealed by God. I do not know anything else, nor do I say anything else but what God has said Himself. All these words I say from the bottom of my heart. God has created the world, and we are the descendants of the Bhaya Bhayin." Having said this he cooks the egg and gives it to eat to the children, but keeps the broken shells and goes to the jungle to cut a branch of the *Keont* tree (*Diospyros tomentosa*) and one of the *Bhelwa* tree (*Semicarpus anacardinus*). He then makes an incision in them with a hatchet, and inserts the broken shell of the egg and plants them in the fields. The branch of *Keont* is in memory of the monkey, and branch of *Bhelwa* is to break the evil mouth and destroy the evil eye; for the oil of the *Bhelwa* tree is such that if even a drop of it falls in anyone's eye the man becomes blind; and a drop taken in the mouth produces sores.

This is done also in memory of the Kerketa and king-crow, for when they went to God to complain of the way they had been treated by the Asurs, he said to them, "Go and live among the Uraons; they will plant branches of *Keont* and *Bhelwa* in their fields; go and perch on these branches, and if any insects or grasshoppers come flying about the place, eat them up." To prevent the evil eye from doing any harm to their crops, they also put on a stick an earthen vessel painted white and black (in this way they have the three colours of the lines used in the *palkhansna*) or the skull of an animal. The evil eye will rest first on these and the crops will be safe.

The ceremony of *Neojana* is also performed to protect children from the evil eye. When the child is some weeks old, they place in his hand some mustard and cotton seeds mixed with turmeric, as much as his little hand can hold, and say, "Let the looks of any evil-eyed man go back to himself; may his eyes burst and come out of their sockets." Then they throw the seeds into the fire adding, "Let the evil eye burst like these seeds in the fire."

They have still more practices to counteract the effects of the evil eye, but this will

suffice to show how much they trouble themselves about it. Anyone can now conceive the effects of these ideas on the people of a village: everyone suspects his neighbour, many quarrels rise, and very often the life of a poor old ugly woman is quite unbearable.

Worship of Baranda.

(*Baranda is the son of the Asur woman who was pregnant and worked the bellows when Dharmes punished the Asurs. He kept the boy and gave him his post to reward the labour of his mother.*)

As their mind never soars very high, we cannot expect to find lofty ideas in their worship. They look upon God as a big *zemindar*, who does nothing by Himself but keeps a *chaprasi* [messenger] or a kind of *tahsildar;* and they conceive the latter as having all the defects so common to his profession. The Uraons seem to be under no obligation to God except the performance of the *palkhansna;* and Baranda exacts tribute from them mercilessly—not exactly out of zeal for the service of his master, but out of greed; for he has to receive his *talbana*. When they suspect that a sickness is caused by Baranda, or when the *ojha* after his incantations has found him in the flickering light of his lamp, they do not proceed with him as they do with the other *bhuts*, as the *ojha* cannot exercise any power over him. But if they cannot immediately offer him the customary *puja*, they make a vow to him (*bachchia bandhna*) and ratify it in this way. They take a leaf of Sakhua, place on it *arwa* rice, turmeric and a leaden ring, and sew the leaf together and tie it up with a *sabai* string and lodge it in the roof of the house. The *Arwa* rice symbolises a sacrifice; *as no sacrifice is performed without the offering which consists in feeding the victim with* arwa *rice.* The *sabai* string means a bullock, because they lead the animal to the sacrifice with a string of *sabai* grass: the leaden ring is the *dasturi* for his wife if he has any: the addition of turmeric tells Baranda that this is only a vow and not the offering itself. Baranda does not take any condiments. If, however, they had not served up turmeric, Baranda would have thought they were only fooling him by offering *arwa* rice, and inflicted condign punishment. Europeans very often do not understand the worship of those people because their ideas are always flying too high and they cannot disconnect religion from mysticism. In the worship of these savages, everything is most commonplace. Anyone knowing anything of the ways of these people will recognise at once in Baranda the *tahsildar* or any *chaprasi* of the sarkar or the money-lender. Do not believe that any Uraon or any Kol has any idea of the mystical meaning of a sacrifice. They cannot conceive any being altogether immaterial; they live themselves only for eating and drinking, and they think that the *bhuts* have to be fed. Their sacrifices therefore are simply the feeding of *bhuts*, whom they look upon as parasites. The blood of the victim is only offered to appease their hunger.

The ceremonies used in the sacrifice to Baranda are most complicated, and no one can tell the meaning of them. When the time appointed for the Puja has come, all the relatives of the man are invited. One of them leads the animal, a bullock, with a rope of *sabai*, and the votary detaches the *ex-voto* from the roof and carries it to the place reserved for offering sacrifices to Baranda. This has, meanwhile, been cleaned and besmeared with fresh cow-dung. The *Sankatalas* proceeds then as he does for the *palkhansna*, draws

his circles to represent the rainbow or God's granary, places some rice and an egg in the middle ; but this time does not use the triangle, nor the five sticks representing the *panch*. Instead of two chapters, he sings only one, *viz.*, the Genesis of the *Asurs* or *bhuts*. At the end he invokes the protection of God against Baranda and says, " O God, from to-day do not send any more your *chaprasi* to punish us. You see we have paid our respects to you, and we are going to give him his *dasturi* " (" tip" or perquisite). Having said this they move a little further to offer their sacrifice to Baranda ; they feed first the bullock with *arwa* rice, which is the offering, then the votary strikes the animal slightly with a hatchet and leaves him to be killed by anyone of those that are present. The skin is immediately taken off and the *Sankatalas* chooses one piece from the ribs, one from the tongue, and three from the liver. He cuts these into small bits, which he strings on the rib of a palm-leaf. This with the rest of the liver is put in an earthen vessel on the fire to cook without any condiment. When the meat is sufficiently cooked, the *Sankatalas* takes out the strung meat and puts it in a winnowing fan, leaving the rest of the liver ; he adds then some water and rice. When he sees that the water is boiling, he again inserts the strung meat into the pot until he sees that five grains of rice are adhering to it, when he takes it out, unstrings it and lets it drop into a winnowing fan. Meanwhile someone of the crowd has prepared two cups each made of three *sal* leaves sewn together. The *Sankatalas* divides the meat into three portions which he lets fall one after the other into one of the leaf cups. This being done, he takes the other leaf cup, puts it on the first and sews them together. A shoot of a *sal* tree of the thickness of an arm is cut, and five rings are cut in it by removing the bark. This represents Baranda. The Sankat sticks it in the ground, places the leaf cups containing the meat close to it, and surrounds the whole with thorns. The ring of the *bachchia bandhna* is thrown inside, and, the vow being now fulfilled, they throw away the *sakhua* leaf and the *arwa* rice with the *sabai* string. Then they all shout, " *Uddu Baranda, Keter Baranda, Chakki Baranda, Dharmes ke chaprasi !* " " Now that we have paid what we owed to your master and given you your *dasturi*, leave us alone and do not come to tease us any more." Uddu Baranda, Keter Barenda are nicknames. They are not afraid of him any more, because they have paid their debts to his master. When this is done, they eat the rest of the liver that has remained in the cooking-pot, whilst the rice is taken out to be distributed to the people of the village. As for the meat, it is divided in this way : the votary gets the leg on which the bullock has fallen when being slaughtered ; the *panchāyat* the other leg ; the rest of the meat is distributed among the other people. When leaving the place, they put the tail of the animal round the post representing Baranda and repeat, " Now, Baranda, we leave you : you have got your *dasturi*, do not molest us any more." Then they depart, and five children who have received five special shares of meat keep on shouting—" E Baranda, E Baranda, give salt, give salt to the man who has offered you the sacrifice !"

Worship of the Spirits of the Asur Women whose Husbands were Destroyed by Dharmes.

The Uraons look upon these not as *bhuts* but as *deotas*, and offer them sacrifices because Dharmes entrusted their feeding to them when they caught hold of the bridle of

his horse Ansaj Prakraj and would not let him go before he explained to them how they could live. These are household tutelary divinities who, however, might become troublesome if they were not properly propitiated.

The Uraons compare the *puja* offered to them to the *tajia* of the Muhammadans. The expenses to be incurred by the votaries are so great that only well-to-do people can afford to perform the rite. The others are satisfied with a vow or *bachchia bandhna*, which is formulated thus : " When we shall be able to do it, we promise you to offer the usual sacrifice." This vow is ratified by putting some *arwa* rice into a *bhanda* (small earthen pot) which they suspend from the rafters of the house with a rope of *sabai*. *Arwa* rice means a sacrifice; the rope of *sabai* means a bullock.

A day having been fixed for the *puja*, the man who is to officiate is notified eight days previously and invitations are issued to as many as possible. Not only are all the people of the village invited, but also those of the surrounding villages. On the eve of the sacrifice they assemble at the house of the votary. Before commencing the ceremonies the man officiating sticks into the roof, on either side of the house, two *chigris*, i.e., two bamboos 10 feet long used for carrying thatching grass. Hence the *puja* is called the *chigrinad puja*. By this time all the inmates of the house have come out, and an earthen vessel called *tawa* is boiling full of oil on the fire close to the entrance of the house ; five cakes have been prepared with rice flour. The man officiating before entering the house, cooks these in the boiling oil and stirs the whole with his hand without (as they say) getting burned. When the cakes are cooked he distributes them to the people. This is done in the evening ; and from that time till next day at 4 P.M. they keep fasting, but they are allowed to drink rice-beer, and this they do with a vengeance. Small *shamianas* made of green branches of trees have been erected in front of the house, and through the whole night and the following day rice-beer is most liberally distributed. The man officiating in the meantime has gone inside the house accompanied by a servant, and is supplied with two big pots of rice-beer. From that time he is not allowed on any account to come out of the house till next day at 4 P.M. A light is burning in the middle of the room, and the offerer of the sacrifice sits with two combs in his hands in front of the light, combing his hair and moving his body from right to left, following the whole time the motion of the flame. This is done in remembrance of the Asur woman who worked the bellows. At about 4 P.M. the next day, the man officiating issues forth carrying the small pot with *arwa* rice that had remained hanging as an *ex-voto*. Two cocks, a white one and a black one, are carried by a boy, whilst a coolie carries two pots of rice-beer. A procession is formed by the men alone, and they march to the nearest ant-hill. A hole is bored from south to north right through it. The *bhanda* is deposited in it, and the man officiating, after feeding the cocks with *arwa* rice, sacrifices one on each side of the hole, throws their heads into the *bhanda*, closes its orifice with a lighted *chirga* and surrounds the hole with thorns and mud. The bodies of the birds are then entrusted to the boys to be duly cooked. When shutting the openings with mud, the master of ceremonies says, " Now that you have had your *dasturi*, protect us and spare us." They then partake of the meat and rice-beer. The *puja* being now considered to be over, they return home and make merry at the expense of the master of the house.

Connected with this *puja* is what they call the *chigrimad bhayari*, which takes place every five or ten years. All the members of the family come together, and after the usual ceremonies a bullock is sacrificed. Its horns are thrust into the ant-hill.

The Cult of Ancestors.

In order to understand the cult of ancestors, it should be borne in mind that the Uraons believe that every man has two shades. As the shadow of a man projected on the wall is double, one very thick in front and the other very light a little behind, so a dead man has two shades, the heavy one that goes to Markha or the heaven of the Uraons, and the other one that remains among them. It will be seen by all their practices that the Uraons believe that they are always living among their ancestors, and they are convinced that they still love them, take the same interest in their affairs as before, and can help and protect them in their difficulties.

Two of their ceremonies will show their belief exactly *viz.*, the *chhain bhitrana*, which consists in calling back the shade of the departed into the house, and the *koman* or the re-uniting of the heavy shade with the shades of their ancestors.

Chhain Bhitrana.—On the day of the burial or burning of the corpse, one of the men of the village is chosen to call back the shade of the departed. In the evening he builds a diminutive hut of branches and straw not far from the burial-place, and after dark sets fire to it. As the fire is blazing he strikes together a ploughshare and a sickle, and pronouncing the name of the departed, shouts three times at the top of his voice, "O so and so, come quick, come quick: your house is burning!" Of course the shade of the deceased cannot resist such a realistic cry of alarm, and when the man thinks that he has given it time enough to reach the place, he leads the way to the old house, beating the whole time the ploughshare and the sickle.

Inside the house, with the door shut, is the nearest relative, sitting before a burning lamp with a cock in his hand ready to be sacrificed. The man with the ploughshare knocks at the door and introduces the shade of the departed, whilst the man inside hastens to sacrifice the cock and pours the blood in a corner of the house to entice the shade to take its abode there.

Now that the light shade has come to its resting-place to remain there peacefully among its old acquaintances, they have to take care of the heavy shade, which cannot be reunited to the ancestors until the ceremony of the *korman* has been performed. This takes place ten days after the burial or the burning of the corpse. During this time the heavy shade is hovering about homeless, between the old house and the burial-place. But they do not forget it; small leaf cups full of rice are deposited on the way to the burial-place to feed it during the short time of its exile. When the time appointed for the *Korman* has come, the small courtyard in front of the house of the deceased is cleaned and besmeared with cow-dung, and a round hole is dug in the middle with a ploughshare. All the people invited bring a little rice in a leaf cup and deposit it near the hole. The *Sankot*, or the man acting in the name of the *panch* of the village, makes round the hole the lines of the *palkhansna* representing the rainbow; inside he puts some

rice and an egg, and, this time without singing the two legends, directly invokes God, saying, "This man (naming him) has been living among us: now he is gone: see that everything be right for him." The egg is then cooked and given to the children to eat, whilst the shell is put in the hole. A small pig is then brought and beaten to death by sticks, and its blood is also dropped in the hole. The *Sankot* alone then pours all the rice brought on a mat, and throws the leaf cups also in the hole and shuts it up. This is a sacrifice offered to Nasre, namely, the personification of the *panch* of the other world. They invoke him saying, "Deign to accept this man among you: he is one of your children; receive him as such and have pity on us also that remain behind." The rice brought is cooked, and everyone eats of it.

The ceremony of *harbona* or *koha-benja* is a sequel to this. The Uraons are not satisfied with the reunion of the shades, but they want also the reunion of the bones. This they call *koha-benga* or the Great Marriage. Those who die before the seeds have sprouted in the field are burnt; and the few charred bones which are not reduced to ashes are gathered in an earthen pot. Over the bones relatives put some rice, native gin, and money; then they take this urn to the river which holds the bones of their ancestors. The Bhuniyars (first settlers and proprietors of their fields) have a particular spot (called *Kundi*) in the river where they deposit the bones of all the members of the family, and if they have been expelled, as is often the case, or obliged to leave their village and their fields, they will nevertheless bury the bones of their dead in the ancient *Kundi*. But the bones of all those who die after the seeds have sprung up and before the end of the harvest, may not be taken to the river, as it is believed that the crops would suffer if this were done. The bones are therefore put away in a pot under a stone near the house till the harvest is over. Then on the *Koha-benja* day (in January) they are all gathered. After the banquet given in honour of the dead, the men and women form a procession to accompany the bones to their last resting-place. Before going to the river they make a tour of the village, and the bones of each departed are brought for the last time before the house he inhabited. The relatives pour some rice and native gin into the urn and tie some sweetmeats which are prepared for the occasion around it. Then the procession starts for the river, the men and women giving vent to their grief in dancing, singing, beating drums and weeping, while the earthen pots containing the bones are passed from hand to hand and are made to take a part, as it were, in the dancing. While yet at some distance from the spot, those who bear the urns run forward and bury them in the sand in the bed of the river. The rest having arrived, they all take a bath and the Great Marriage is over.

As has been said before, the *panch* of the heavy shades, namely the ancestors gone to Markha, is personified by Nasre, whilst the light shades that remain with their relatives are personified by Pachbal. Besides the *puja* offered to him on the *Korman* day, two other sacrifices of fowls of special colours are offered to Nasre every year in every house. It is remarkable that, in offering sacrifices to their ancestors, they do not use *arwa* but common rice, and they kill the bird by putting the head in the ground and hitting it with their fist. Most probably this custom dated from the time when *arwa* rice and knives were unknown among the Uraons.

The great feast of the *Pachbal* is the *Naya* or the eating of the new rice. This is a day of rejoicing among the Uraons, who generally have been fasting for several months. Sweetmeats in profusion are prepared for the children, and it is certainly the best day of the year for them. It is touching to see the old people remember those days with gratitude to their old departed parents. As they were fed so liberally on that day by their now departed parents when they were helpless, so they now in their turn want to feed them (namely the *Pachbal*) by offering them sacrifices ; and no one will partake of the new rice before the *firmitica* are offered to the ancestors. A handful of it is made into *chura* and spread on the ground. A *hanria*, or pot of rice-beer, is prepared, and before anyone drinks of it some is spilt on the ground, and everyone afterwards dips his fingers in his cup and lets fall some drops also in honour of their ancestors. A fowl, neither white, nor red, nor black, but whity grey, is offered in the old way, namely crushing the head with the fist. The eldest of the family then says, "O old mothers and fathers, you have always been so good to us on these days. Here we are rejoicing: we cannot forget you: come and rejoice with us."

They invoke their ancestors—

1. When they give a name to a newborn child. They always choose the name of an ancestor with much ceremony, which will be described afterwards. When the name is chosen they invoke him, put the child under his protection and say, "See, now this child has taken your name, protect him."

2. In time of sickness or difficulties they have recourse to them and say, "You have left us your children; you see in what difficulties we are; help us and do not forget us, for we do not forget you and always give you your *dasturi*," meaning the sacrifice. Generally they promise to give them a fowl if they are helped.

3. At the time of marriage twice—when the fathers of the bride and bridegroom join arms and when they drink two pots of rice-beer in their honour and spill some on the ground and say: "Now we have married this couple: you, their ancestors, help them and protect them."

4. At the time of the *koman* as it has been described. To be recognized and admitted into the other world by their forefathers, boys burn five spots on their arms. This is very painful, and to help them to be courageous the others say: "Look at the burial place; there are your ancestors; if you are not courageous they will not receive you." The girls also for the same reason have three vertical lines tattoed on their forehead and three smaller ones on each of their temples with a little spot on the hollow of the nose and the chin.

When they build a new house the ancestors are invited to go to it, and a sacrifice is always offered to them the first day the house is occupied. Their devotion to the *Panchbal* goes so far that many of them will never drink rice-beer without letting some drops fall on the ground for their benefit. The teachings of the *Panch* represented by the *Sankatatas* also being now exhausted, let us come now to the religious practices which are common to the Uraons and all the other tribes of Chota Nagpur, namely, the teachings of the *Pahan* or village priest and of the *Ojha* or Exorcist. It is almost certain that the Uraons before their arrival in Chota Nagpur knew and practised only what has been explained before, and had neither *Pahan* nor *Ojha*.

This is proved :—

1. By the unanimous testimony of the best informed among the tribe.

2. By the scrupulous use of their language in the preceding ceremonies, whilst they use Hindi or rather the Sadari *lingua franca* of Chota Nagpur in all the other ceremonies.

3. By their choice of *Pahan* or *Baiga*.

In villages where there are people of Kolarian origin and Uraons living together, a man of Kolarian origin will always be *Pahan*, and everywhere they will try to entice a *Kol* to remain in their village to do the office. It is only when they cannot help it that they choose a man of their tribe.

In order to understand the whole system it is necessary to have an idea of the organisation of the invisible world of parasites in which the Uraons are living.

There are household *bhuts*, sept *bhuts*, village *bhuts*, village *devtas*, wandering *bhuts*, common *devtas*.

The household *bhuts* of the Uraons are *Baranda*, *Chigrinod*, *Panchbal* and *Nasre*.

The sept *bhut* is *Khunt Nasan*. With the household *bhuts* and with the sept *bhuts* the *pahan* or priest has nothing to do.

The village *bhuts* are *Khunt*, *Bhula*, *Churil*. These are generic names which will be explained afterwards.

The village *devtas* are (*a*) *Pat*, with his *chaprasi* or *chaukidar*, *Duharia*, and (*b*) *Chala Pacho*, or *Sarna burhia* or the lady of the grove, with her faithful attendant and *dame d'honneur*, *Deswali*.

The *pahan* or priest, acting always in behalf of the community, is in charge especially of the village *devtas*, and through them of the village *bhuts*.

To the village *devtas* should be added *Mahadeo* and *Parbati* his wife, but these are specially worshipped by people of Kolarian origin—the Uraons have no devotion for them.

The common *devtas* are *Dhartimai* (the earth) and *Surajmai* or *Bhagawan* (the sun). It should be noticed *en passant* that the earth is considered both as a *devta* and as a *bhut*, *Dhartimai*—tutelary divinity, *Dharti nasan*—mischievous *bhut*.

The authority of the village priest or *pahan*, as has been said, extends over the village *devtas* and village *bhuts*, whilst the *Ojha*, *Mati* or *Dewair* has to deal with all the mischievous *bhuts* who are the cause of all kinds of sicknesses, and even with some *devtas* and village *bhuts* who might punish the people, because they have been slighted by them or because they have neglected their duties to them.

Let us now examine the *pahan* or village priest—his office, his teachings and functions. The office of *pahan* is hereditary, but if the *pahan* dies without male issue or if he is converted to Christianity, a new *pahan* has to be elected—supernaturally elected. There are different ways of ascertaining the will of the gods. The three principal are these :—

(1) A round stone used to grind curry is thrown at random all about the village. When it stops exactly before the door of a house the master of that house is elected.

(2) A winnowing fan is introduced into a cleft bamboo so that it can move about in every direction. All the eligible people are assembled, and the winnowing fan is pushed forward in front of them. The man towards whom the winnowing fan turns will be elected.

(3) All the eligible men being assembled, as many clods of earth as there are men, are placed in the middle, each clod of earth representing one of the men present. A child is called, and a curry-stone is put in his hand. It is said that the curry-stone will drag the child to the clod of earth representing the man who has to be elected.

The *pahan* teaches that—

Pat is the master of all the village *bhuts* who are immediately under his control. He is a great friend of the *pahan* who through him has great authority over the *bhuts*. He lives on a hill close by from which he can see all that is going on in the village. He is a good *devta* and does not allow the *bhuts* to cause too much disturbance in the village. If *Pat* was not there to forbid them, the *bhuts* would upset everything and kill everyone.

Pat being in authority, must have a *chaprassi*, and he has one: his name is *Duharia*. He lives in the boundaries of the village and is always on the watch for the village *bhuts*, his office being exactly the same as that of the village *chowkidar*. Every day he has to consult with *Pat* and report what is going on among the *bhuts*.

Chola Pacho or the Lady of the grove lives in the *sarna* or sacred grove. She has nothing to do with the *bhuts*. She is credited with the power of giving rain and consequently good crops. She is the shade of the old woman who received *Dharmes* and washed his wounds when he came down on earth to punish the *Asurs*. *Deswali* is the faithful *dame d'honour* of the Lady of the grove.

All the *devtas* have a proper place assigned to them in the village, and are represented by a stone marked with *Sendur*.

These are the shades of the *Asurs* who were punished by the *Bhagwan*. They are separated from their first wives, but they have married *Bhula* wives.

There are also two other *devtas*, viz., *Chandi* the goddess of hunting and *Gaurea* the tutelary divinity for cattle. Though they do not belong to the *Pahan* exclusively, they may be introduced now; their worship will be explained afterwards. *Khunt* is the generic name for all the *bhuts* that have taken their habitat in the village, and are, as it were, the first settlers or *bhuniyars* of the place. They seem to have the same organisation as that of a band of banditti. They belong to both sexes. Their leaders are *Darha* and *Dakhin* his wife. Just as all booty goes first to the leaders, so no sacrifice is offered to the other *bhuts* without the knowledge or participation of *Darha* and *Dakhin*. *Khunt* would be better known under the name of *Darha & Co.* *Darha & Co.* are like *darogas* and constables. When they receive bribes they go shares, but the *daroga's* is always the lion's share. *Darha's* band is billeted in the village, some living in caves, some in fields, others in trees, others in ravines. There is not a queer-looking place which has not its *bhut* or *bhuts*. Some of them live like hermits; here and there you have a mother with her daughter, and so on. The *Baiga* and the *Ojha* have to know all by name and to be familiar with each one. In every village they are known by different names, but their chief is always *Darha*, and they are all *Khunt* or *Khunta*. *Churil* means the shades of all the women of the village who have died in pregnancy and have been buried within the boundaries of the village. They always remain near their burial-place, and the people take great care that they should not roam about the village. When, therefore, a woman dies whilst pregnant or in childbirth, or as long as the navel string has not fallen, she is held

to become a *bhut.* No one can imagine the state of consternation in which the relatives of the poor woman are when she dies in such a state.

No greater misfortune could have befallen them. They firmly believe the poor woman has become a mischievous *bhut.* She will now hover over her burial-place and be an object of horror and fright to everyone passing by. It is her nature to look out for a companion, and she is said always to choose that member of the family whom she liked best during her lifetime. She will then come at night and embrace him and tickle him under the arms, making him laugh till he dies. This is too much of a good thing, and the *Uraons* do not appreciate being subjected to such extravagant tokens of affection. To prevent her therefore from coming back they carry her body as far away as they can, but no woman will accompany her to her last resting-place lest similar misfortune should happen to her. Arrived at the burial-place, they break the feet above the ankle, twist them round bringing the heels in front, and then drive long thorns into them. They bury her very deep with her face downwards, and with her they bury the bones of a donkey and pronounce the *anathema*, " If you come home may you turn into a donkey " : the roots of a palm-tree are also buried with her, and they say, " May you come home only when the leaves of the palm-tree wither," and when they retire they spread mustard seeds all along the road saying, " When you try to come home pick up all these." They then feel pretty safe at home from her nocturnal visits, but woe to the man who passes at night near the place where she has been buried. She will pounce upon him, twist his neck and leave him senseless on the ground, until brought to by the incantations of a sorcerer. Pregnant woman are always in a mortal fright when they hear someone speak of a *Churil.* The husband of a woman who has become a *Churil* would never dare to think of getting married again until he has offered a sacrifice to appease the *bhut.*

When *Churil* has been the cause of some mischief and appears in the flame of the *Ojha's* lamp, her face looks somewhat like *Dakhin's*, but her feet are distorted : she is hunchbacked and has a big hole in her belly like the hollow of a rotten tree. To appease her the *Ojha* offers a white fowl. He breaks first the right wing, then the left leg ; part of the head is skinned, and the tongue is drawn out of the beak and cut with a knife. After mutilating the poor bird in this way he throws it on the ground and forces it to eat some *harwa* rice saying, " You scoundrel, you are not a fowl but the daughter of a *bhut.*" He then cuts its throat, and the sacrifice is over.

Bhula, namely the wanderer, is also the generic name of a class of *bhut* which are subdivided into three chief species : the *Pāsal Muan* or the shades of all those that have been murdered ; the *Tāngal Muan* or the shades of those that have been hanged ; and the *Bāghaut* or those that have been killed by a tiger. In fact *Bhula* means the shades of all those that have died an unnatural death. They all keep the scars of their respective wounds, and one can imagine what a weird-looking lot they are. They are always on the move, and are, as it were, the mendicant portion of the invisible community. They are not very powerful, and are responsible only for small ailments like nightmares, comas and small indispositions. When an *Ojha* has discovered him in the light of his lamp he shows a disappointed face and says : " Pshaw, only *Bhula !* " No sacrifice is offered to him,

but the *Ojha* there and then takes a few grains of rice, rubs them in charcoal and throws them at the flame of his lamp saying, " Take this, *Bhula*, and go away."

Balsadhak looks like a still-born child. This is a favourite of the *Ojhas*, as he is the *bhut* which produces hallucinations and trances. He has the power of shutting up the eyes of the people and making them believe all that the *Ojha* says is true. A full-fledged *Ojha* must have in his house the navel of a still-born child, on which he pours milk every month. If he is faithful to this practice he will get many clients, the people will have great confidence in him, and he can quickly discover the *bhuts*.

Murkuri is the thumping *bhut*. Europeans to show their kindness and familiarity thump people on the back. If this is followed by fever or any kind of sickness it will be ascribed to the passing of *Murkuri* from the body of the European into the body of the native.

Chordewa is a witch rather than a *bhut*. It is believed that some women have the power to change their soul into a black cat, who then goes about in the houses where there are sick people. Such a cat has a peculiar way of mewing quite different from its brethren, and is easily recognisecd. It steals quietly into the house, licks the lips of the sick man and eats of the food that has been prepared for him. The sick man soon gets worse and dies. They say it is very difficult to catch the cat, as it has all the nimbleness of its nature and the cleverness of a *bhut*. However, they sometimes succeed, and then something wonderful happens. The woman out of whom the cat has come remains insensible, as it were in a state of temporary death, until the cat re-enters her body. Any wound inflicted on the cat will be inflicted on her ; if they cut its ears or break its legs or put out its eyes the woman will suffer the same mutilation. The Uraons say that formerly they used to burn any woman that was suspected to be a *Chordewa*. Such a woman sometimes also roams about at night in the form of a dwarf carrying a small basket, in which she steals paddy, and people believe that when she comes home and pours out the contents, she finds that she has stolen a big heap. People who watch at night near the threshing-floor are always in a mortal fright of a *Chordewa*.

There is also *Anna Kuari* or *Mahadhani*, who is in our estimation the most cruel and repulsive deity of all, as she requires human sacrifice. Those savage people who put good crops above everything, look upon her in a different light. She can give good crops and make a man rich, and this covers a multitude of sins. People may be sceptical about it and say that it is impossible that in any part of India under the British Government there should still be human sacrifices. Well, in spite of all the vigilance of the authorities, there are still human sacrifices in Chota Nagpur. As the vigilance of the authorities increases so also does the carefulness of the *Urkas* or *Otongas* increase. They choose for their victims poor waifs or strangers whose disappearance no one will notice. April and May are the months in which *Urkas* are at work. *Doisa*, *Panari*, *Kukra* and *Sirguja* have got a very bad reputation. During these two months no strangers will go about the country alone, and during that time nowhere will boys and girls be allowed to go to the jungle and graze the cattle for fear of the *Urkas*. When an *Urka* has found a victim he cuts his throat and carries away *the upper part of the ring finger and the nose*. *Anna Kuari* finds votaries not only among the Uraons but especially among the big

Zemindars and Rajas of the Native States. When a man has offered a sacrifice to *Anna Kuari* she goes and lives in his house in the form of a small child. From that time his fields yield double harvest. When he brings in his paddy he takes *Anna Kuari*, rolls her over the heap to double its size. But she soon becomes restless and is only pacified by new human sacrifices. At last after some years she cannot bear remaining in the same house any more, and kills everyone.

Khunt Nasan is the sept *bhut.* He is simply the personification or rather the deification of Death, which is personified to the European mind in the shape of a skeleton with a scythe in its hands. These people imagine that it is the sept *bhut* which they have never been able to tame, and which has carried off all the members of that sept. After all, all these *bhuts* and *devtas* are only deifications of good and evil. The difference between us and these people is that we personify and they deify. Personification implies no duty, whilst deification implies the duty of worship. Every year a sacrifice is offered to *Khunt Nasan* consisting of three fowls—one black, one brown, and a cock black and red. The eldest member of each family has to offer him a buffalo as a sacrifice, at which all the members of the family have to be present.

Dain.—It is difficult to give a direct definition of this *bhut.* Originally there were twenty-one *bhuts;* a mother and her twenty daughters who, by the strength of their *mantras*, could cause anyone they wished to become possessed of any particular *bhut* they desired. They are the most powerful among *bhuts*, and no one can resist them; they are the incarnation of mischief. Even *Pāt*, the tutelary divinity, who forbids the *bhuts* to do mischief, cannot resist their *mantras*, and becomes mischievous under their influence. He becomes like a man intoxicated and forgets himself and his duties.

Here is the story that will give a clear idea who these *Dains* are, and how they got their tremendous power. It will also show at the same time what the relative status of the *Ojhas* is. In the beginning Mahadeo had taught a man all the *mantras* and medicines, whereby he became almost all powerful. He then set up a school to teach others. At first, numbers of people flocked to him and were very eager to learn, but after some time, seeing the difficulty of mastering all the *mantras*, they one by one dropped out and left the school. Two of them, however, persevered, and their perseverance was rewarded by a fair knowledge and consequent power. One day, after working very hard in the fields, they were coming home with their plough on their shoulder, Mahadeo appeared to them under the form of a *jogi* and began to talk amicably with them saying: "Poor fellows! you have been working very hard and it is so hot. Are you not thirsty? You should take some rest: come, let us sit down in the shade of this mango-tree." They put down their ploughs, stuck them against the trunk of the tree and sat down. Mahadeo looked very kind and most interested in the two young men. "Well," said he, "I am very glad to hear that you are the only two young men who have persevered in the school of the *guru.* I congratulate you. By this time you must know a good number of *mantras* and be powerful." The two disciples who had been taught by their *guru* to be very discreet and prudent, did not give way at first to Mahadeo's flattery, but answered—"Indeed, we have been studying, but we know very little as yet and can do nothing." "Come, come," said Mahadeo, "don't be so humble, show what you can do.

See if you are as powerful as I am" ; and muttering some *mantras* he uprooted the mango-tree and whirled it round their head with one hand as if it had been only a small twig, and then put it back in its place. The disciples seeingt his could not resist the promptings of vanity and muttering some *mantras* in their turn : they picked up some loose earth and threw it on the tree : instantly the leaves withered and died. Then pronouncing some other *mantras* they threw again some mud at the tree and the leaves instantly became green as they were before. This yielding to vanity was the seal of the doom of the human race. Had they been able to resist the temptation and stick to their first assertion, that they knew nothing, Mahadeo would have left their *guru* alive and they would have been able to learn all his *mantras*, and men would have been immortal. As it was, Mahadeo saw that he had made a mistake in divulging his secrets. "Well," said he to himself, "if this goes on, men will be as powerful as I am and will learn the secret of immortality." He at once resolved to get rid of the *guru*. Accordingly he had him bitten by a cobra. As soon as the man felt the poison taking effect he called his two disciples and told them to go quickly and fetch the medicines of immortality. They ran and again met Mahadeo, who stopped them on their way and asked them where they were running. They told him : "Our *guru* has been bitten by a snake, and we go to fetch medicine for him. "Useless," said Mahadeo, "it is too late ; he is dead." The disciples suspecting nothing ran back to see the body of their beloved *guru*. He was not dead as yet, but it was too late to return and fetch the medicine. They told him what had happened, and the *guru* said : "I see that Mahadeo wants me to die : never mind, let me be, but when I am dead, carry my body to the riverside and eat first my liver, and then my whole body. In doing so you will get possession of all my *mantras*." Saying this he died. The disciples carried the body to the riverside, opened it first, and taking out the liver wrapped it in *Sakhua* leaves and put it close by. As they were cutting up the body Mahadeo arrived and upbraided them : "You villians," said he, "what are you doing ? Shame ! Is that the way to treat your *guru ;* what an idea ! What a sin to eat the flesh of your *guru*. Don't, burn it at once and throw everything into the river." They did so, and got the smoke and steam into their mouths. In their hurry they picked up everything that was on the ground and threw it into the river. The liver wrapped up in the *sakhua* leaves remained floating, and finally arrived at the mouth of the Ganges. There lived a mother with her twenty daughters : they were playing in a boat when the youngest of all saw the leaves of *Sakhua* with the liver floating close by ; immediately she threw herself in the water, caught the small bundle and hid it in the folds of her *sari*. All the others surrounded her at once and wanted to know what it was, but she would not answer. A struggle ensued, and the eldest caught hold of her arms whilst another snatched the liver from her. They then all ate of it, and so got possession of nearly all the *mantras* of the *guru*. Had the disciples been able to eat the liver and the body they would have been even more powerful than the *Dains*. As it was, they swallowed only smoke and steam, that is why their *mantras* are weak and they have to work the whole night to subdue a *bhut*. These two disciples taught the *Ojhas*.

As for the *Dain Bisahis*, namely the women who by their *mantras* communicate with the *Dains*, there is a great mystery about them. The Uraons cannot understand how a

woman can acquire such a power, *viz.*, the power of commanding *bhuts*. Something, however, leaked out as to how it is done, and here is what is known. When a would-be *Dain Bisahi* wishes to learn, she strips off all her clothes and puts them near her *Akhara* or dancing place. She then puts on a *peridzoma* made with broken sticks of an old broom and goes to a cave which is the resort of *Dains*. There she makes a hole in the ground. As the boys and girls are dancing, she is learning the *mantras*, and before leaving puts a small pebble in the hole. Her education can only last one year; if at the end of that time the hole is filled to the top with pebbles it is a sign that she has learnt everything. She then has the power to take away life and restore it. Otherwise, if she has only succeeded in partially filling the hole, she can only take away life. Every year the *Dain Bisahi* has to sacrifice a black cat, the blood of which is poured in the hole she made before learning. Now to understand well what a *Dain Bisahi* is, and what rôle she plays in a village, it is necessary to know that *bhuts* do not leave their habitat or attack people before being put up to it by a *Dain* or a *Dain Bisahi*. As the people believe that every sickness is due to a *bhut*, and the *bhuts* except *Bhula* do not leave their dwelling-places without the intervention of a *Dain*, it can be imagined what an amount of suspicion is rife in every village. In every village there is certainly one and very often several *Dain Bisahis*. There is not the smallest ailment that is not attributed to them. More especially on the death of a child does the mother become beside herself with rage and madly attacks any of the women that are suspected to be *Dain Bisahis*. They go straight to the suspected *Dain Bisahi* and tell her that she has " eaten " their child, as they graphically term it. There will be a tremendous row, and the people will always take the part of the bereft mother. One can well imagine what a miserable life the women suspected of being *Dain Bisahis* lead. They are generally old, ugly-looking women with a bad character which such scenes are not calculated to improve. It is not to be wondered at if the poor creatures take their revenge in hating everyone and living up to their character, and take a certain pleasure in seeing the fear a threat to " eat " her tormentors or their children will produce.

Now that we have got a sufficient knowledge of the invisible world and of its organisation, let us come to the functions of the *baiga* or *pahan*, and afterwards to those of the *ojha*.

The *pahan* or *baiga* has to officiate at the three great feasts of the year, namely, the *sarhul*, the *kadleta*, and the *kanhiari*.

The feast of *sarhul* takes place in May when the *sal* tree is in flower. To Uraons the feast is known as *khaddi*, namely the flower of the *sal* tree. The object of this feast is to celebrate the mystical marriage of the Sun-god (*Bhagawan*) with the Goddess-earth (*Dharti-mai*), to induce them to be fruitful and give good crops. At the same time all other *bhuts* of the village are propitiated, so that they may not frustrate the efforts of the Sun God and Goddess Earth. This is the greatest feast of all.

On the eve of the appointed day no one is allowed to plough his fields, and the *baiga*, accompanied by some people of the village, goes near the *sarna* or the sacred grove. He sounds the drum and invites all his invisible clients to the great feast that will take place the next day, promising to give them a good treat. The next morning, even before

cock-crow, the *pan-bhara* steals out of his house, and, as stealthily as he can, he goes to the *sarna dari* or sacred fountain to fetch water in a new *gagri* or earthen pot. This water contains all kinds of blessings for the crops. The *pahan* has prepared for it a place in the middle of his house surrounded by cotton threads of different colours. There it remains the whole day. The water is so sacred that it would be spoiled if any eye rested on it before it reached the *baiga's* house. The *pan-bhara* and the *pujar* in the morning go from house to house to collect the victims for the sacrifice. In the afternoon, at about two o'clock, all the people are invited to be present at the *sarna*, not only Uraons and Kols but even Hindus.

[The sacred fountain contains the rain *pāni*. In that fountain there is a collection of all the produce of the country—rice, pulse, oilseeds, etc. etc., contained in small earthen pots, hollow bamboos, *sakhua* leaves, etc. This has been there from time immemorial, placed there by the first *baiga* of the village. If any of these seeds is taken away it is looked upon as a great curse and the crops are sure to fail. But to every evil there is remedy, and they have the means to find the lost seeds again by the *gaon-sagi*, a strange ceremony which will be described afterwards.]

Before beginning the *puja* the *baiga* puts on the sacred string of the *brahmans*. Then the *pan-bhara* brings him two victims—a white cock for the Sun-god (*Bhagwan*) and a black hen for *Dharti-mai* or the Earth-goddess. As the feast is the celebration of the marriage of these two, the binding ceremony of marriage is performed on these two victims. The white cock is first marked with *sindur* and then the black fowl. The earth is also marked with *sindur* at the place where the *puja* is to be offered. The victims having then been fed with *harwa* rice are sacrificed. After this follows the sacrifice of a red cock or a black goat to *Pāt*. Then to *Chala Pacho*, *Anna Kuari*, *Mahadeo*, *Duharai*, *Deswali*. The other fowls are then sacrificed by the *pujar* to all the *khunt bhuts* of the village, giving one to each of them, if there are enough, or one for two or three of them. *Dharti-Nasan* and *Bhagat*, being considered as very mischievous *bhuts*, get their sacrifice from the hands of the *ojha*.

The bodies of the victims are collected by the boys of the village who cook them on the spot. All the heads go to the sacrificers. Meanwhile the *pan-bhara* has collected flowers of the *sal*-tree around the place of sacrifice, and fetched the *rais-pani* or blessing water from the house of the *baiga*. A procession is then formed and the *pahan* is carried in triumph to his house. There his wife is watching for him, and they go through the ceremony of marriage applying *sindur* to each other—this again to symbolise the mystical marriage of the Sun-god with the Earth-goddess. By this time all the women of the village are standing on the threshold of their houses, each with a winnowing fan containing two leaf cups—one empty to receive the blessing water, the other with rice-beer for the *baiga*. His reverence stops at each house, distributes flowers and blessing water (this water is sprinkled on the seeds that have been kept for the new year), showers blessings on every house saying, " May your rooms and granary be filled with paddy, that the *baiga's* name may be great. " He does not forget his rice-beer, so that one can well imagine the state he is in when he arrives at the end of the village. By that time everyone has taken copious libations of rice-beer, and all the devils of the village seem to be

let loose, and there follows a scene of debauchery baffling description—all these to induce the Sun and the Earth to be fruitful.

Kadletta is not a very great feast, though fowls are offered to all the *deotas* by the *baiga*. The headmen of the village assist at the *puja* and carry away the bodies of the victims to be distributed among the villagers, whilst the *pahan* gets only the heads for his share. From this time (in June) up to the feast of *kanihari*, which takes place in November, the *baigan* or *baiga's* wife is not allowed to eat anything that has not been prepared by herself or to drink any water that she has not fetched herself. This is done to prevent wild animals destroying crops. On that day *Darha* and the other deities are not forgotten; for five fowls are offered to them by the *pujar*.

Kanihari.—This is a feast previous to the threshing of the paddy. No one is allowed to prepare his threshing-floor before the *baiga* has gone through the ceremony. On the appointed day all the people of the village assemble with the Zemindar at their head. Plenty of offerings for sacrifice are brought. The *pahan* selects a small place near the biggest threshing-floor, clears it and besmears it with diluted cow-dung. When it is dry he makes a rectangle with flour that has been prepared from the new rice, and divides it into five parts. In each of these parts a fowl is sacrificed by the *baiga* himself and the blood spilt on the blades of the new rice that have been brought by everyone. A young black pig is offered to *Chala Pacho* and a he-goat to *Pat*. *Darha* and the other deities are not forgotten, and get fowls sacrificed to them by the *pujar*. A Tuesday is the only day on which this feast can be held. On that day the Zemindar alone is permitted to prepare his threshing-floor and thresh a few sheaves. In the evening there is a common meal at which the *baiga* presides, and this being over they go to the place where Mahadeo is worshipped and the *baiga* pours milk on the stone that represents him. From that time the people begin to dance in front of the *pahan's* house. Plenty of rice-beer is brought, and a scene of debauchery takes place in which all restraint is put aside. They sing the most obscene songs and give vent to all their passions. On that day no one is responsible for any breach of morality. But this is nothing compared to what takes place every ten years when the *baiga* marries Mahadeo to *Chala Pacho*. On that year, milk is not put on the Mahadeo stone, but leaves of the *sal* tree are sown together and put close to the stone by the *pahan*. This is to induce Mahadeo to signify his consent to the marriage by depositing on these leaves clay enough for two small statues. Of course it behoves the great deity to show some reluctance, and in years that there is abundance of rice to make beer he keeps his votaries in suspense for five or six days. During that time the *baiga* is fasting but the people are not, and in order to entice Mahadeo to give his consent full liberty is given to the boys and girls to enjoy their passions. They spend the whole night in dancing and revelry. At last the *baiga* comes bearing triumphantly the leaves with the mud that *Mahadeo* has vouchsafed to supply. With that mud he makes two small statues representing *Mahadeo* and *Chala Pacho*, clothes them with yellow clothes and then marks them with *sindur*. He starts then for a tour round the village accompanied by the people dancing and singing as at a marriage-feast. He halts at the richest houses, exhibits his two statues, marks them again with *sindur*, and prays to *Mahadeo* and *Chala Pacho* that they should themselves be very liberal to the masters of the house.

Of course, the people are very pleased, and he gets lots of paddy for his reward. He then goes back to his house always accompanied by a crowd of drunken dancers. There they spend the last night of debauchery. The next morning the *baiga* throws the two statues into the river, and the feast is over.

Bhut Bhitrana.—Some people in despair at remaining always poor take upon themselves the risk of having a *bhut* as their guest. This is arranged by the *pahan*, but he always admonishes the people that it is at their own risk and that he is not responsible for what may happen. The *baiga* then accompanied by the man goes to the habitat of one of the *khunt bhuts* of the villages. A fowl is brought and fed with *arwa* rice but not sacrificed. Then the *baiga* explains to the *bhut* that the man wants to become rich and that he invites him to live in his house. The consent of the *bhut* is presumed, and he goes to the house of the man where the *baiga* sacrifices the fowl. Some *arwa* rice, some *sindur*, and the blood of the victim are then deposited in a small earthen vessel and hung to the rafters of the house. There the *bhut* will remain. But he is a very dangerous guest, and from that time the people of the house have to be very careful not to displease him, and must try to pacify him by frequent sacrifices. They say that from that day the man becomes prosperous, but not for long, as all the people of the house are carried off one by one and killed by the *bhut* who is ever restless in his new abode.

The Ojha (Mati, Dewair).

The office of the *Ojoha* consists :—

First.—In finding out which *bhut* is the cause of a sickness and telling by what sacrifices he can be appeased.

Second.—In subduing *bhuts* and ejecting them from bodies and houses.

Third.—In finding out the *dain bisahi* or *vice-dain* who by her *mantras* has launched the *bhuts.*

Fourth.—In finding out the *bhuts* who are the cause of an epidemic and explaining the means of getting rid of them.

Fifth.—In finding out the *bhut* or *bhuts* who have stolen the blessing, giving seed pots from the sacred fountain.

Hence the different practices of—

1. *Ghosna.*
2. *Niksari.*
3. *Kanspandi.*
4. *Gaon banawri.*
5. *Gaon saji.*

The *ojha* has to learn for a long time, and has to pass an examination before he gets his degree. There are regular schools in nearly every village. The *guru* or teacher is either a *Lohar* or a *bhuniyar* and sometimes a *Turi.* At first nearly all the young men of the village want to learn the trade, but soon the numbers dwindle away, as they see the difficulty of mastering all the *Mantras* and incantations, so that only the cleverest and most persevering among them can become *ojhas.* Every evening they spend three, four

and sometimes five hours in learning the *mantras* and the names of the *deotas* and the *bhuts*. The *guru* is generally a renowned *ojha*—a man with a strong imagination and the gift of the gab, who gives fearful descriptions of the *bhuts* and their doings, until the heads of his pupils are stuffed with all kinds of weird-looking imaginary beings. They are taught how to work themselves into a trance, and some having more (*gun*) disposition to hypnosis than others, can pass their examination after one year, whilst others have to learn for two or three years. Of course they do not know the mysteries of hypnotism and attribute everything to *deotas* and *bhuts*. When a pupil is ready to pass his examination he has to recite all the *mantras* and incantations, give the names of all the *deotas* and *bhuts* and *gurus*, and perform all the duties of the *ojha*. When the candidate has done well he brings a fowl to sacrifice to the *deota* whom he has chosen for his special patron. Everyone is at liberty to choose the *deota* he likes the best. From that time he has to propitiate him by frequent sacrifices. The fowl that the successful candidate has brought is then sacrificed in honour of his patron, and the *guru*, dipping his finger in the blood of the offering, marks with it a big line on the forehead of the future *ojha*. From that time he can begin to practice. When a man gets ill an *ojha* is called in to ascertain which *bhut* is the cause of illness. He comes in the evening with his winnowing fan and a handful of rice. He first examines the patient, feels his pulse, and gives him some medicine. Then he squats cross-legged on the ground. On his lap he has the winnowing fan with some rice in it, and close at hand an unlit lamp. His left hand holds the end of the winnowing fan and with his right hand he stirs the rice, turning it round and round as if to mix it up well; he shuts his eyes, throws back his head, and, in a low nasal voice, invokes all the *deotas* of the world, beginning with the *deota* of the district in which he lives; then the *deotas* presiding over the destinies of the south, north-east and west; then those of all the surrounding districts and of all the chief towns of India. He invokes even the *deotas* of Europe, and it is rather interesting to learn from these people that we are under the protection of a goddess named *Baghwa—Belait ka Baghwa*. In all 35 *deotas* are invoked; that they may watch the *bhuts*, bring them bound and secured like thieves to the *ojha;* that he may make them shake and tremble like the billows of an angry sea. After this comes an invocation to all the renowned *gurus* of India with their patron *deotas*, more than 50 in number. Then follow *mantras* and incantations without end. A man must have a marvellous memory to learn all this by heart. All this time there is profound silence in the house, and everyone watches and listens. There is darkness, only the burning embers of the hearth throw a dim light over the scene. Suddenly the *ojha* gets excited and bursts into lively incantations, turning his head right and left, and stirring the rice with frenzy until he falls into a trance, in which it seems to him that he is wandering about the fields, rocks and ravines of the village in search of the *bhuts*. He sees them all, some seated at the entrance of a cave, some perched on trees, some digging, some ploughing, some washing their clothes. As he sees them he calls each by name. Those first named pay no attention to him, but suddenly he remarks that one of them becomes shy when his name is pronounced. He sticks to that name, repeating it continually until the *bhut* cannot stand it any more, and out of shame comes into the winnowing fan and shakes it with rage till the *ojha* gets frightened, throws it on

the ground and gets up in a fright. Now, there is not the least doubt that at that moment the winnowing fan moves by itself, raised as it were in the air by an invisible hand. Most probably this is a phenomenon like that of turning the table. There is no doubt either that the *ojha* sees vividly all these unreal beings. They have repeatedly heard from the mouth of their *guru* most graphic and frightful descriptions of *bhuts*, making their hair stand on end, and so impregnated are they with these thoughts that their imagination is excited to the utmost by their efforts to discover the *bhuts*, and by the effects of the monotonous incantations most readily yield to hallucinations. The fact is that they do see. One can fancy how strong is their faith. Macbeth saw the dagger and shouted in his fright: "Is this a dagger. My eyes are made the fools of the other senses or else worth all the rest." He doubted in spite of the vividness of the apparition. The poor aborigines does not reflect so far. For him his eyes are worth all the other senses. He sees, and at once believes what he sees, is. It is therefore difficult to convert an old *ojha* to Christianity, but when they are really converted they are the best.

When the guilty *bhut* has, as they say, shaken the winnowing-fan, the *ojha* lights his lamp to make sure that he has discovered the right *bhut*. This is called *ras-batti-karna*. In the flickering flame he sees the shade of the *bhut* whose name he has repeatedly pronounced. When the sick man gets all right after the first seance, the *ojha* asks for a fowl which he sacrifices to the *bhut*. But when the man gets all right only after repeated *ghosnas*, or when the other people of the house get sick also, the conclusion is that the *bhut* has taken possession of the house and will not leave it without being expelled by force. This is *Niksari*. But this expulsion is a very expensive business, and the people are seldom ready to incur all the expenses at once. The least that can be offered is three pigs, two goats, six fowls, and one rupee four annas to the *ojha*. Now, how to get rid of the *bhut* till the man is able to collect all the victims for the sacrifice? Again, let us put aside all our ideas of mysticism and try to think like those people. The *ojha* can catch the *bhut* in his lamp; he has seen him, therefore it is there. The only thing is to imprison him temporarily until steps can be taken to imprison him completely. He therefore begins his *ghosna*, until he catches the *bhut* in his lamp. When he gets him there he takes out the wick and shuts it up in a cone of *sakhua* leaves. This is obviously rather a *pis aller* of a prison, and the *bhut* might easily get loose. But the *ojha* is a man of expedients; and to prevent the *bhut* escaping he offers a sacrifice to his patron *deota* and asks him to watch the *bhut* like a sentinel till the *niksari* which he promises to perform after three or six months. He then takes the cone with the *bhut* to the next ant-hill, bores a hole in it and deposits the mischievous *bhut* inside and shuts the opening with a stone. The sacrifice to the patron *deota* is offered there, and the blood of the victim is spilt near the opening. There the patron *deota* will sit and watch the *bhut* till the *niksari* is performed.

Niksari.—When the man has collected all the victims for the sacrifice he tells the *ojha* that everything is ready. The *ojha* then goes to the blacksmith, as he wants this time to secure the *bhut* well and put him in iron. He has, therefore, an iron cone made just in the shape of a paper cone with one of the sides protruding. This is called *singhi*. In the evening, armed with his *singhi* and accompanied by two of his pupils

carrying a lamp, two antelope horns and a *bhanda* or earthen pot painted red and white inside, he goes to the house of the votary. Plenty of rice-beer has been prepared for the exorcists, as they will have hard work. The *ghosna* goes on the whole night with great vehemence till about 3 o'clock in the morning, when the whole party falls into a trance and the *ojha* declares that *Pat* or some other great *deota* is riding on his shoulders and orders him to hammer the *bhut*. He gets up, seizes the antelope horn and begins to hammer in all the corners of the house like a madman upsetting everything, whilst the people of the house anxiously wait, trembling with fear and constantly asking him if he will be able to drive out the *bhut*. Of course he will. He continues hammering for half an hour and calls one of his pupils also to help him. At the end, panting and exhausted, he declares that the *bhut* is subdued. He then lights his lamp and ascertains that the *bhut* is really exhausted and asks for mercy. He will then take out the wick and put it into the iron cone, but to be sure that the *bhut* is not pretending he takes out the wick, puts it back into the lamp, hammers again, lights it again and repeats the operation three or four times till the *bhut* appears to be fainting. *Bhuts* are great rascals, and ought to be treated as such, and no precaution is omitted to secure them properly. At last the wick with the *bhut* is put in the iron cone, which is shut by hammering the protruding end over the opening. The *bhut* is now well secured. A procession is formed, the offering in front. One of the pupils carries the *bhanda* with a lamp burning inside. The people of the village follow. Everyone leaves the house, the *ojha* last of all carrying the *singhi*. He himself carefully shuts the door, and all march to the ant-hill in which the *ojha* had put the *ex voto* before. There the *ojha* takes out the *sakhua* leaf with the *arwa* rice, and then the slaughter begins. First a white cock to Dharmes, saying : " *Sattri Maharaj*, a burden on the head of women, a burden on the shoulders of men. " Then follow a black fowl to *Dakhin*, a black cock to *Darha*, one black and white to the ancestors, then again a pig for *Dakhin*, one reddish white for *Darha*, and one black and white for *Churil*. Some of the blood is poured on the *singhi*, in the ant-hill and in the *bhanda*. In a shoot of *sakhua*, one inch thick and one foot long, they insert one pice and some turmeric. This they deposit in the ant-hill, put a stone over it and shut it well, pronouncing this anathema : "If you descend to the centre of the earth may 16 cobras bite you ; if you ascend up may vultures eat you ; if you fly may your wing break ; if you try to come back may your leg break." After this they wash their hands and feet and go a little aside to offer a white cock to Dharmes saying : " *He*, Dharmes, deign to persuade this *bhut* not to tease us any more. We are stupid men, thou knowest what is to be done. We do not know. " A he-goat is then sacrificed to *Pat* or whatever other *deota* that has helped in securing the *bhut*. Of course they eat there and then the flesh of the offerings. When they return the *ojha* opens the door of the house and has it cleaned and besmeared with cow-dung by one of his pupils. He goes then to sit in a corner, and the people come in like strangers. He receives them as such and welcomes them, saying that they can stay, that everything is all right. The comedy is over and the *ojha* gets one rupee and four annas and a pot of beer.

Kansphandi or test by the plate (the finding out of a *dain bisahi* or witch).—When in spite of the *ghosna* and *niksari* sickness is always recurring, they think they cannot get

rid of it unless they catch the woman or *dain bisahi* who, by the force of her *mantras*, causes the *bhuts* to attack them continually. This is also the work of the *ojha*. He comes in the evening and proceeds as he does for the *ghosna* the whole night, till the rising of the sun. At about 8 o'clock he goes into the garden or into a grove with a brass plate called *chepi* and a *lota* of water. Arrived at the place appointed for the *kansh-phandi*, he pours water into the *chepi* before the people that have assembled. He then drops into it a grain of *kurthi* (*Dolichos uniflorus*), and calling the people that have organised the *kansphandi*, bids them look at the grain of *kurthi*. He himself looks at the shadow of it and sees the woman that they have suspected to be the cause of the sickness. He describes her, says what she is doing, how many children she has, etc. etc., and at last pronounces her name. The people, enraged, get up, go to her house and abuse and threaten her, in order to force her to confess her guilt. If she denies, they have recourse to the *sokha*.

The *sokha* is generally a Hindu or a low-caste Muhammadan, or even an Uraon *bhagat*. A *sokha* is not allowed to eat meat or to drink any intoxicating liquor. The people generally choose one living very far, not less than 15 or 20 miles from their village, so that they can be sure that he does not know what is going on there. They take with them a handful of rice. When they come near the *sokha* they tell him, "We have come to you for a very important business. You are our father and mother. We are in trouble: help us." The *sokha* gets up without asking any question, brings some burning charcoal from the fire, and lets fall in it some incense and a few grains of the rice the people have brought. He sits near the fire, shakes his head violently and soon falls into a trance, always intently looking into the fire. The people are sitting round him. He then puts all kinds of questions as if speaking to himself, and answers them all himself. "What kind of a woman?"—"Oh yes, she looks so and so." "How many children has she got?"—"Oh yes, so many." "Where is she living?"—"Oh yes, in such and such a place." After some time he comes back to his senses and asks the people what he has been saying. They tell him, and he asks them if he has given the true descriptions of the *dain bisahi*. If they are not satisfied with that, the *sokha* is ready to say her name; but they have to pay him five rupees. For this he has generally to make use of the *kansphandi* or the test by the plate. The telling of the name is called *nam tipi*.

Now, there is not the least doubt that the *sokha* does not know the people who come to consult him. He does not even know the name of their village. There are indeed some charlatans among the *sokhas*, but many of them are of the real type. There is no question either of the *ojha* communicating with the *sokha*. How is it that they can designate the same person? When the name given by the *sokha* is the same as that given by the *ojha*, they come back and go to their zemindar to consult him. He comes, assembles the people of the village, and they send the chaukidar who, in his dignity of *Maharani-ki-naukar*, seizes the *dain bisahi* and brings her to the dancing place. She has to pay first a fine of Rs. 5 or Rs. 10 to the zemindar. Fancy now the scene that goes on when all these infuriated savages gratify their rage against the person they think to be the cause of the loss of their parents and children! There is not an insult that she has not to bear: they strike her, kick her, and sometimes burn her hands and legs and even kill

her. When their first burst of fury is over, they shave her hair entirely, lead her to the boundaries of the village and threaten to kill her if she dares to come back. Now, seeing the result of these practices, would it not be good to follow the example of James the first and make these punishable offences? Those *ojhas* and *sokhas* are most dangerous men and the cause of much mischief. Out of a hundred cases of *dain bisahi* there is not one that goes before the court, for the victims cannot produce a single witness. Even her own children abandon her and shrink from her.

Rog khedna (the driving out of sickness).—This is a very curious custom which illustrates well the simplicity of their ideas. Anyone who has travelled in Chota Nagpur has certainly met on his way a heap of broken earthen pots, fragments of mats and old brooms. This is due to the *rog khedna*. When there is a kind of epidemic of small ailments, especially among children, sore-throats, diarrhœa, etc., it is attributed to a band of foreign Bhulas who have crossed the boundaries of the village. As they are considered to be beggars, they are treated as such, and the people play them a nasty trick. The *pahan* or the *ojha* is called and a fowl is given to him All the women assemble, each one carrying something—one an old earthen pot, another a piece of mat, a third an old broom. The *pahan* or the *ojha* calls all the Bhulas and pretends to feed the fowl with *arwa* rice as if to sacrifice it to them. Of course, the poor fellows are not accustomed to such a treat and would follow the *pahan* to the end of the earth to get it, especially when they see all the things that are prepared for them in the shape of old pots and mats. Being like Doms, they are not particular about their caste. Then the *pahan* carrying the fowl heads the procession to the boundaries of the nearest village. There instead of sacrificing to the Bhulas, he summons Duharia, sacrifices the fowl to him, and after making a hole in the ground on one side of the road, pours the blood of the offering into it. Of course, Duharia is bound now to stick there and keep an eye on the Bhulas to prevent them from coming back, but Duharia is a *chaukidar*, and like his *confréres* often goes to sleep. To obviate this difficulty and prevent the Bhulas from coming back without his knowledge, they put a string across the road connected with the hole in which Duharia is sitting. Any Bhula trying to come back will knock his foot against the string and wake up Duharia.

Gaonsaji.—This is perhaps the strangest ceremony of all, and the best calculated to deceive these stupid people. There is a mixture of hypnotism and fraud in it. The fraud is on the part of the *pahans* and the *ojhas*. In the fraud the latter are not deceived, but they are also deceived in the effects of hypnotism, as they believe it to be produced by a *deota*. And here a word should be said about their way of looking upon trances. They call it *bharna uthna*, i.e., to rise mad. They believe that the heavy shade of a *deota* comes and oppresses the shade of the man subjected to a trance, so that his body is moved (*chalaned*) by the shade of the *deotas*. To express our idea that a man is easily hypnotised, we say that he is a fit subject for hypnotism. To express the same idea they say that the man (*halka chhain-ka-hai*) has a light shade that can be easily oppressed by the shade of a *deota*. We have spoken before of the *sarna dari*, or the sacred fountain in which a handful of every kind of produce of the country has been deposited in hollow bamboos or earthen pots, etc., the water of which contains all kinds of

blessings for the crops. When any of those receptacles, containing either paddy or any other produce, has disappeared from the sacred fountain, the crops are sure to fail, and will continue to fail until they are found again and replaced in the fountain. The *gaonsaji* is the ceremony performed to find out where the *bhuts* have hidden the precious pots, for no one but a *bhut* can be mischievous enough to commit such a crime. When, therefore, the crops have failed for several years, the only possible cause is that the sacred fountain has been desecrated by the disappearance of the blessing-producing pots. The *pahan* and the *ojhas* of the place agree together, go to the fountain, take out the pots, and hide them in ditches and ravines. They go then to the chief man of the village and settle a day for the *gaonsaji*. Offerings for the sacrifice are collected, and on the appointed day, *ojhas* from the surrounding villages are called. These and the village *ojhas* and the *pahans* proceed to the *sarna* accompanied by the people. The *ojhas* with their lamps sit in the middle, and the people squat around them. Lots of drummers *tam-tam*, whilst the *ojhas* begin their incantations together to discover the *bhut* who is the cause of the misfortune. Being sometimes ten or twelve in number, they soon find him out and oblige him to come to their lamp, whence he is taken and shut up in a *singhi* as in the *niksari*. The thief being now bound and secured, the difficulty is to find out the stolen property, as the *bhut* will never confess his guilt. Only a powerful *deota* can subdue him. They, therefore, begin working at the *ghasna* with a vengeance, invoking all the *deotas* of the earth and entreating one of them to be so kind as to cover one of the men present with his shade. The scene is well calculated to hypnotise even worse subjects than the natives. All the *ojhas* are chanting their incantations and turning the rice in their winnowing fans with frenzy. Moving their heads to and fro, the drummers are beating the *tam-tam*, doing the same, and very soon the heads of all the congregation are moving. This lasts sometimes a very long time, until one of the assembly, or one of the *ojhas*, falls into convulsions. Then the incantations and noise redouble, the *ojhas* repeating always the name of the *deota* they were pronouncing when the man began to show signs of possession. On, on they go till the man falls into a real trance. Then the *singhi* in which the *ojhas* have shut up the guilty *bhut* is put in his hands, and he runs about as if in search of something, followed by the *ojhas*, the drummers, and all the people vociferating imprecations against the *bhuts* and exciting the *deota* to press him hard. But the *bhut* is not so easily subdued and very often takes the *deota* to a different place from that in which he is credited with having hidden the sacred thing. There they dig, and if nothing is found, their imprecations against the *bhut* and their invocations to the *deota* redouble. At last, after several fruitless attempts at deceit, the *bhut* takes the possessed man to the right place. This is repeated five or six times until all the pots are found out. This ceremony sometimes lasts eight days. The sacred pots are then replaced in the fountain by the *pahan*, and sacrifices are offered to *Pāt* and other *deotas* who have helped them. The *singhi* with the *bhuts* are thrown into the river. Now we know that the *pahan* and the *ojhas* have hidden the pots, but the difficulty is to explain how the man who has fallen into a trance can find them out. The supposition of his being an accomplice cannot be held, as anyone can fall into a trance, and the *ojhas* do not know who will be the man. It is, however, true that any mesmerist is able to make his

subject see, hear, taste or feel in obedience to suggestions; and the *ojhas*, having mesmerised the man, can suggest him to do as they like. It is wonderful how easily natives fall into a trance! In a Mission School, in Chota Nagpur, every time the boys sang and beat the *tamtam* together they constantly fell into trances and would run like rats along the rafters of the school, and do all kinds of wonderful things.

III.—Social Customs.

The Uraons are a very prolific race, and, whenever they are allowed to live without being too much oppressed, they increase prodigiously. What strikes you when you come to an Uraon village is the number of small dirty children playing everywhere, while you can scarcely meet a woman that does not carry a baby on her back. The women seem, to a great extent, to have been exempted from the curse of our first mother: "Thou shalt bring forth, etc." They seem to give birth to their children with the greatest ease. There is no period of uncleanliness, and, the very day after giving birth to a child, you will see the mother with her baby tied up in a cloth on her back and a *ghagri* on her head going, as if nothing had happened, to the village spring.

Generally eight or ten days after the birth of a child they have the ceremony of the *chhathi* or the giving of the name; in this we find an instance of how difficult it is at times to reconcile the proverbial indifference and unprovidence of the savage with the precaution they take for the welfare of their children, even at this early stage of their existence. On the day appointed for the *chhathi*, some men of the village representing the *panch*, and some members of the family, assemble at the house of the child. Two leaf cups, one full of water and the other full of paddy, are brought. The head of the child is shaved and his hair is put in the cup full of water. The men representing the *panch* sit round the cups and invoke their forefathers; and, after pronouncing their usual formula, "Above God, below the *panch*," one of them takes a grain of paddy and lets it fall in the water in the name of God. Then he takes another grain and lets it fall in the name of the *panch*. These two have to meet, if not they try a second and third, and, if after several attempts the grain do not meet, they give up the ceremony and the child is always looked upon with suspicion. When, however, the two grains have met, they are satisfied that God is propitious to the child. They then let another grain fall in the name of the child, and one in the name of each of his ancestors, continuing till one of the grains meets with the one dropped in the child's name. The name pronounced when this particular grain is dropped in will be the name of the child. The succession of names brought on at is as follows:—First the paternal grandfather's name, then the paternal great-grandfather's, the father's, the paternal uncle's, and the maternal grandfather's; then the names of other relatives.

The paddy left in the second cup after the ceremony is kept for seed, and what it yields at harvest time is kept and sown again, and so on from year to year until, by a constant progression, the paddy is sufficient to buy a cow or some goats which, in their turn, will increase and become the property of the child. This is called *punji*, and is designed to be given at the time of marriage. But as the Uraons know fully well how weak are the ties of hymen, they wait generally till the first child is born to the married

couple before giving the *punji*. There is, however, a kind of promise made at the time of marriage. When food is brought to the boy or girl, they pretend not to want to eat it. Then their respective fathers-in-law come and cause them to eat, but no entreaty can succeed until they put a sign with cow-dung or goat-dung on their forehead, meaning that a *punji* of cows or goats will be given to them. If, as it happens sometimes, the parents of the girl, in time of distress, have eaten up the *punji* of their child, the father takes his daughter and puts her in the arms of the boy telling him: "This is all I can give you."

When a boy is six or seven years old, it is time for him to become a member of the *dhumkuru* or common dormitory. The eldest boys catch hold of his left arm, and, with burning cloth, burn out five deep marks on the lower part of his arm. This they do to be recognised by the Uraons at their death, when they go into the other world. The Uraon girls are similarly all tattoed in one particular way: three parallel vertical lines are traced on the forehead, the extreme ones having the shape of a badly formed F. Then two vertical parallel lines on both temples crossed by another line, forming a kind of capital H, with one side protruding. Sometimes they add also one spot on the hollow of the nose and one spot on the chin.

Dhumkuria.—As the Uraons have not accommodation enough for their children to sleep in the house, they have a common dormitory in which the boys sleep together. As for the girls, they go and generally sleep in the house of an old widow who is not such a fearful cerberus as not to be softened by kind attentions from the boys of the *dhumkuria*. The would-be vestals are then, as may be imagined, exposed to many dangers. In villages in which they less respect themselves, the boys and girls sleep promiscuously together in the same dormitory. The *dhumkuria* boys form a kind of association; and they pledge themselves to the greatest secrecy about what is going on in their dormitory. Woe to the boy who dares to break that pledge. He would be most unmercifully beaten and looked upon as an outcast.

In order, they say, to make the boys hardy members of the tribe, they have a kind of mutual training in which the eldest boys of the *dhumkuria* bully the younger ones, and make them suffer all kinds of trouble and bodily punishments. There is, in fact, a regular system of bullying. Uraon boys and girls are very tender-hearted and form strong friendships. When two girls feel a great affection for each other they swear eternal friendship and call each other by the sweet name of *gui*, my flower. This kind of friendship is sealed by mutual presents. Among the boys the same custom exists, and they call each other *sar*, *phul*, *sangi* or *karamdar*.

When boys are about 12 years of age they divide into different classes. Those who belong to a well-to-do family stay in the house of their parents and work with them and for them. Those whose parents are not rich enough to feed them become either *dhangar* or *ghar damad*, *ghardijia*.

Dhangar.—A *dhangar* is a contract labourer. There are interesting ceremonies in connection with the engagement of a *dhangar*. This is done at the end of January, in *Magh*. When an Uraon farmer wishes to engage a young man as a *dhangar* he calls him to his house at the feast of *Magh*. There are always some other people present besides

the members of the family. Rice-beer has, of course, been prepared, and when the young man is introduced to the company, the mistress of the house comes and washes his feet therewith. This is only a preliminary to the binding ceremony, for if he allows himself immediately afterwards to be also anointed with oil, then he is considered to have signed a contract by which he engages himself to serve in the house on the following conditions, which are very just and very liberal:—

1. Board and lodging. 2. His *pogri*, which depends on his strength. In June, the boy will get as much paddy as he can carry in one side of the *bangi* to sow in a field that has been prepared for him. The produce will be his property. He will get also seven measures (*pailas*) of millet to be sown in a field, also prepared for him, and he will be allowed to sow cotton in a small piece of land in which two seers of paddy can be sown. Besides the produce of all this he gets at the end of the year seven baskets of paddy as big as he can carry away with his *bangi*. This contract lasts only one year, after which he is free to remain with his old master or choose a new one. In the beginning of *Magh* there is a feast in the house lasting two days. On the first day, the *dhangar* goes to the jungle and brings a good load of wood to bake bread. They spend the evening and a great part of the night in dancing, drinking and eating bread, the master and the *dhangar* supplying each two *handias*. The next day is spent by the *dhangar* in hunting and fishing; and in the evening he will bring to his master such delicacies as rats, mice, etc. On his arrival the mistress of the house anoints him with oil and gives him two combs, whilst the farmer asks him if his intention is to leave him or remain with him. On this he will give his answer, and not another word will be said on the subject.

The next morning the master and *dhangar* go together to plough a field, and if the latter has made up his mind to leave service, his master in coming back will put in his hands one ploughshare and two skin ropes to tie the yoke. This is the sealing of his dismissal and the breaking up of the mutual contract. If he has made up his mind to remain this last ceremony will not take place and the contract will last for one year more.

Ghardamad or *Ghardijia*.—When the parents of a boy see that they will not be able to provide a wife for their son, they place him in a house as *ghar damad*. Like Jacob he has to work several years to get his wife. There is no special ceremony, only the boys' parents come to the house of their future relatives. They drink rice-beer together, and when leaving they say: Now this is your child, he belongs to you; take him as your own son.

During all the time that he remains in the house he is treated exactly like a member of the family, and gets board, lodging and raiment like all the others, but like a *dhangar* he also gets his *pogri*, which consists of one maund of paddy and six measures of *gundli* to be sown in a field prepared for him. The produce will be for him, and he is allowed either to keep it in the house of his future father-in-law or lend it out at interest. As long as he remains in the house of his father-in-law, even after marriage, he is entitled to his *pogri*. He can leave the house and work for himself when he likes.

Caste.—The Uraons form what may be called a wild tribe, without any general administrative organization; there is no recognized headman of the whole tribe, and the

authority of any given man does not reach beyond the limits of his own village. The only organization to safeguard the customs of the tribe is a general *panchayat* of chief men of a group of villages. This takes place very seldom, and only when a man has to be ejected from the tribe or readmitted into it.

The following are the offences for which the punishment is expulsion from the tribe :—

(1) Eating cooked rice with any man not belonging to the tribe, or eating rice cooked by anyone but a member of the tribe.
(2) Sexual intercourse with any member of any other caste.
(3) Drinking water, rice-beer or eating bread with any member of caste or tribe with whom it is forbidden to do so.

They are allowed to drink water and rice-beer with all the aboriginal and semi-aboriginal tribes except the Turis. They can also eat bread and meat with them, provided they be cooked in a vessel that has not been used previously for cooking rice or curry vegetables. There is no restriction on eating or smoking tobacco with anyone. They lose their caste by drinking water with Lohars, Ghasis, Turis, Chamars, Dusadhs.

The readmission into the caste is the work of the *kartaha*. His office is hereditary. There are three or four of them in every district.

When a man has been ejected from the tribe for one of the offences mentioned above, and wishes to be readmitted, he goes to the *kartaha* who fixes a day for the *panchayat*. On the appointed day all the chief men of the surrounding villages are summoned to attend at the meeting. They all assemble at the village of the delinquent and form a great committee with the *kartaha* at their head. They discuss the question, weigh the fault of the man, and settle how much he has to pay and give. This depends on the fault committed and on the means of the guilty man. The penalty is always a very heavy one for poor people. He has first to feed all the members of *panchayat* and the whole village for one day and a half. Of course, everybody makes the most of the opportunity, and they are not satisfied with a dry meal with rice and meat, but they must be well supplied also with plenty of rice-beer. The least the *kartaha* takes for his remuneration is Rs. 10. A white goat is sacrified to *Dharmes*, and the guilty man has to drink some of its blood to wash away the stain of his sin. At the last common meal he is called, and if he has done everything to the satisfaction of the *panchayat*, he is allowed to sit and eat with everyone, not, however, before getting a sound admonition from the *kartaha*.

The *Panch*.—In every village there is a kind of administration which, however, is far from being the same everywhere. In its most ancient form it consists of: (1) The *panch* ; (2) The *munda* ; (3) The *pahan* ; (4) The *mahto*. Where this form exists the people are divided into three *khunts*—the *pahan khunt*, the *mahto khunt*, and the *munda khunt*. The *panch* or *panchayat*: According to the etymology of the word this should be composed of five members only, but in practice the *panch* is the whole community represented by its eldest members. A *panchayat* is an assembly of the *panch* or the eldest people of the village to discuss a question or settle difficulties that arise in the

community. There is no doubt that formerly the authority of the *panch* was paramount among the Uraons. In older times the *panch* consisted of the oldest members of a certain group of villages who used to hold the *panchayat* in the village in which a difficulty had to be settled. To defray the expenses of these assemblies they had put aside in every village a certain amount of land called *panchaiti khet.* This belonged to the community, and was cultivated by anyone on condition that he fed the *panch* when there was an assembly. Now, since the introduction of civilization into the country, the Uraons have acquired the knowledge of the Courts of Justice, and the prestige of this institution has somewhat suffered, though it is still held in the greatest reverence. There is a time-honoured expression which shows their respect for the *panch.* In every important affair before beginning their deliberations they say: "Above God, below the *panch*"—meaning that after God, the *panch* is the highest authority.

In villages where there are not two parties in continual opposition to each other, the *panch* can be relied upon to settle questions in the best way possible, and, even where frictions exist, there is no doubt that much light can be thrown upon village difficulties, and much information can be gathered on land and other affairs by assisting at a discussion of the *panch.* Practically, in cases where the law does not interfere, the *panchayat* can decide all difficulties and disputes that can arise in an Uraon community. They can settle land disputes, difficulties about inheritance, marriage questions, adultery cases, and any infringement of the customs of the tribe. They can impose fines, the penalty of default being treated as an outcast in the village. Of course the local police, seeing excellent opportunities of taking bribes, slip away from them and try to minimize the authority of the *panch;* but thanks to the good sense and administrative foresight of the higher authorities, the *panch* is allowed to do its work undisturbed as long as it does not interfere directly with the law.

The *pahan*, besides his religious duties and prerogatives, must be considered also as as an authority in the temporal affairs of the village. He is looked on as the man who knows best the boundaries of the different lands of the village, and specially the boundaries of his own village. Whenever there is a dispute about them he is consulted. Formerly when a dispute arose between two villages about their respective boundaries, there was a ceremony a kind of ordeal resembling the *jugement de Dieu.* A hole was made on the two different boundaries designated by the two different *pahans;* they had to stand knee deep with their legs buried in the ground on the boundary that each maintained. The one who stood the ordeal the longer was judged in the right. This ceremony is now very seldom practised. It is called *gor-gari* or the burying of the leg.

To understand the *khunt* system we have to go back in mind to the time when the Uraons first settled in Chota Nagpur. The Mundaris were there before them. They had cleared the jungle and made several villages, but there were still many more to be made. As there was plenty of room for both, the Mundaris did not interfere with the new-comers. These in their turn began to clear the jungle and make new paddy-fields. At that time there was no raja in possession of the country, and the Uraons adopted the same system as that prevailing among the Mundaris. The first son of the first settler became the *munda,* namely the head or chief, and the second became the *pahan.* Later

on the third son became the *mahto*. These three families increased and formed three dfferent groups called by them *khunts*, viz , the *munda khunt*, the *pahan khunt*, and the *mahto khunt;* and, up to this date, in villages where the Uraons were the first settlers, these three *khunts* exist. As they are all the decendants of the same man, *i.e.*, the first settler, all the members of these three *khunts*, in the same village, have the same *gotra* or family name.

As there was no raja to interfere with them, they became possessors of their lands as *primi occupantes*, and they retain their lands rent free up till now under the name of *bhuimar*. According to their hereditary system the *munda*, or first son, got more land than the *pahan* or second son, and the *pahan* more than the *mahto* or third son, so that more *bhuimari* land belongs to the *munda khunt* than to the *pahan khunt*, and to the *pahan khunt* more than to the *mahto khunt*.

The *munda* became the chief of the village as being the possessor of the most lands. The *pahan*, besides his share by inheritance in the *bhuimari* lands, got from the community about eight bighas of land which they call *pahanai*. This he cultivates to defray the expenses connected with the different *pujas*. Later on he took two assistants, namely, the *pujar* and the *panbhara*, and out of his *pahanai* he gave two bighas to the *pujar* and one bigha to the *panbhara*. This is called *dalekatari*. The *mahto*, whose office was at first, as it were that of the policeman of the village, got also a special land from the community called *mahtoi khet*. When the rajas began to take possession of the country, they left the first settlers, namely, the three *khunts*, in possession of their respective lands, whilst all the new settlers had to pay rents, and the *mahto* became the collector of rents in the raja's name. He remained also, as it were, the burgomaster of the village, and all the orders emanating from the raja and, later on, from Government were given to the *raiyats* through him. This state of things lasted for some time, until the raja began to distribute villages to his servants who thus became landholders. They collected the rents, but the *mahto* retained his position in the eyes of the people and the Police. Now this *khunt* system exists only in villages where the Oraons were the first settlers. In other parts of the country, where they settled after the country had been taken possession of by the rajas, the *khunt* system does not exist, and there are no more any *bhuimari* or rent-free lands.

In some villages, where Mundaris and Uraons have settled from time immemorial, the *munda* and *pahan* are invariably Mundaris whilst the *mahto* is an Uraon. In more recent villages there is no *munda*; there is, however, always a *pahan* who cultivates rent free his *pahanai*, or about seven or eight bighas of land; and the *mahto* is only, as it were, the servant of the zemindar, who for his service gets from him a piece of land rent free.

There is also the *bhut kheta*, which is generally cultivated by the *pahan khunt* people. The condition of the tenure is that they have to supply big animals like bullocks and buffaloes for the sacrifices. This is called *bhut kheta*, because these fields are supposed to be haunted by *bhuts* and the produce must be used in feeding them.

Endogamy.—The Uraons are a purely and absolutely endogamous tribe. On no account can they intermarry with any other tribe or caste. Anyone marrying out of the tribe would be at once ejected from it, and could not be readmitted before leaving his

foreign wife. They are also purely totemistic and divided into a great number of groups or septs, each bearing the name either of a plant or an animal. These divisions of the caste are called *gotras* and are exogamous, and on no account will they allow two people of the same *gotras* to marry. The *gotra* is always reckoned solely from the male side. The marriage rules are very simple and may be formulated thus: No one is allowed to marry out of the tribe or with anyone of his own *gotra*, the *gotra* of the mother being altogether disregarded; but relationship without any totemistic hindrance goes to the third generation. Their standard formula is: We change our blood to the third generation.

They do not know the origin of their totems, and do not seem to attach very great importance to the observances connected with them. Here is a list of them with the restriction put upon them.

The observances are of three kinds:—1. Not to eat the totem of the *gotra*. 2. No to eat the fruit of it. 3. Not to use the oil extracted from its fruit or touch it.

1. Not to eat.—

(*a*) *Bokhla*—Paddy Bird.
(*b*) *Chigalo*—Jackal.
(*c*) *Dhichua*—King crow.
(*d*) *Ekka* or *Khachhap*—Tortoise.
(*e*) *Kayu*—Wild dog.
(*f*) *Kerketa*—A kind of hedge sparrow.
(*g*) *Kinds*—A kind of crop.
(*h*) *Khakha*—A crow.
(*i*) *Khalkho*—Strad fish.
(*j*) *Gidhi*—Vulture.
(*k*) *Kispota*—The bowels of a pig.
(*l*) *Lakra*—Tiger.
(*m*) *Minj*—An eel.
(*n*) *Orgorao*—Hawk.
(*o*) *Biga-Aluman*—Baboon.

2. Not to eat the fruit of—

Bara—The fig tree (*ficus indica*).
Madgi—*Mahua.*
Kirs Khochol (*lit.* pig's bone) a tree full of thorns.

3. Not to use the oil of—

Kujura—a kind of long creeper, the fruit of which yields a kind of oil which is not to be used by the people of that *gotra.*
Khers—Paddy: the people of this *gotra* can not use conji water.
Beh—Salt: to be used only as condiment, not to be eaten alone.
Panna—Iron: can not be touched with the mouth.

IV.—Marriage.

Marriage ceremonies of the Uraons are very complicated, but as they are very quaint nothing will be omitted in their description. First, let it be known that the boy and girl have absolutely nothing to say in the matter. Everything is settled by the parents. Infant marriage is not in honour among the Uraons, and the tendency is rather to put off the marriage as long as they can. The average age of the bridegroom is 16 and that of the bride 14 or 15.

Preliminaries.—When a boy is about 13 years of age, the parents look out for a wife for him. When they have found a girl, who they think will suit their boy, they go to her house and propose to the father. If he accepts the proposal, a day is settled for the girl's father to come and see the boy. On his way he takes great care to notice all omens on the road. If a jackal crosses the road from right to left, if he meets a woman carrying ashes and clothes in an earthen vessel, if a dead animal is being removed, if a snake or vulture crosses the path, if the branch of a tree or a fruit falls, if he hears the cry of an owl or jackal, etc., the errand is a bad one.

On the contrary a woman carrying water or throwing cow-dung, a jackal crossing from left to right, monkeys crossing the road—these are all considered good omens.

As soon as the father arrives, the question of the omens seen on the road is discussed. If any of the bad omens have been noticed they agree that the marriage should not take place. "Brother," they say, "the gods do not want this marriage to take place: let us not go against their will." If on the contrary nothing unlucky has happened, they eat and drink together and a day for the *panbandhi* is fixed.

Panbandhi, or the settling of the price.—This generally takes place eight days after the first visit. The boy's father, accompanied by some men of the village representing the *panch*, start in the evening carrying with them $2\frac{1}{2}$ maunds of paddy, $1\frac{1}{2}$ maund of *gundli*, some *urid* and *serson*. This will be the sealing of the first arrangement, and, from that time, both fathers call themselves *samdi*. That evening nothing is done. The next morning the girl's mother, accompanied by all the matrons of the village, come to wash and anoint the feet of the boy's father who gives them one rupee and promises to add four rupees more on the marriage day. This is called the *panbandhi*. Then the rejoicings begin. All the people of the village are invited; two boys come and anoint the visitors with oil. From every house of the village that can afford it a *handia* or pot of rice-beer is brought, and they drink together and make merry. All this time the girl has been kept aside, but now she suddenly sallies forth carrying a *handia* on her head. A murmur of admiration greets her when, stepping through the crowd, she comes and stands in front of her future father-in-law, who at once takes the *handia* from her head embraces her and gives her one rupee. From that time, during the whole time of the feast, the girl remains sitting at the feet of her father-in-law. The whole party meanwhile continue drinking and talking; and voices rise so high that they cannot hear one another. As a diversion the old women of the village all come tumbling in very drunk and wearing fantastic hats made of leaves, gesticulating like devils and carrying a straw manikin representing the bridegroom. They all look like old witches, and, in their drunken state, are very mischievous.

Let us draw a veil on this disgusting scene—it would not do to listen to the obscene songs and filthy jests that are going on for half an hour to the great merriment of the drunken assembly. The *panbandhi* is then over and the party returns home. The marriage will take place only two or three years afterwards. During that period two regular visits will be paid annually by the girl's parents—one in June called *asari*, and one in December called *aghani*. At these two feasts *handia* is supplied by the boy's father and a goat or pig is killed.

Gharbari.—A few days before the marriage another visit and ceremony will take place which is called *gharbari*. On that day the bride's father, accompanied by the *panch* of his village, comes to settle about the day of the marriage. For this occasion 15 *handias* or pots of rice-beer have been prepared, and all the village being invited in addition. Everyone brings one *handia* from his house, so that rice-beer is again flowing liberally. They all gather before the house where a bower has been erected ; both fathers sit together on a special mat in the middle. At a given signal they both get up, and when silence is gained, they join arms and one of them says : " Above God, below the *panch*. He who wishes to cut, let him cut now. What is joined with iron can be separated, what is joined with skin cannot be separated." The other one in his turn repeats the same sentence and adds : " Now is the time to say the right word." All the party puts then an end to this imposing scene by shouting in chorus, "*Hogeya, hogeya !*"—it is done ! Two boys then step in and anoint both fathers with oil. Then they eat and drink and make merry till the evening of the following day. Two pigs and fowls are killed for the feast.

Marriage—When the day of marriage comes there is a great stir in both villages : all are invited to the feast. A large party of men followed by women carrying bundles of clean clothes on their heads, with all the children dancing round them, accompany the girl. A queer reception awaits them. The people of the boy's village are on the look-out, and scarcely are the visitors in sight, when they see the whole population sallying forth armed with clubs and long bamboo sticks, gesticulating and vociferating. They all gather at the entrance of the village brandishing their sticks as if to repulse a sudden attack. A sham fight ensues, and when their vocabulary of profanity is exhausted, on a given signal, the whole scene is suddenly changed into a merry dance in which the bride and bridegroom take part seated as traddle on the hips of one of their respective friends. This lasts about half an hour, after which the noise subsides and they sit down quietly to prepare their meal.

Meanwhile, the boy's friends are busy preparing their *banquet de fête*. They cannot make speeches, but this special banquet symbolizes, in a most striking manner, all the wishes that could be expressed in the most eloquent speech. Ears of paddy with their stems have been carefully kept by the boy's father. They choose a handful of the best ones sufficient to fill in the mouth of a small earthen pot called *bhanda*. The ears are divided into two parts by bringing one part of the stems over the ears ; the stems are then planted below, and the whole is placed in the mouth of a *bhanda* containing rice, turmeric and oil-seeds. In the division of the ears a small lamp is lit in which there are some grains of *urid*, whilst the plaited stems symbolize the close union which will bring forth

plenty, symbolized by the beautiful ears of paddy. The *bhanda* contains all that is necessary to live and make the couple happy. The girls in the meantime have prepared a big rice cake which is placed in a basket close to the *bhanda*. When the meal is over, two women daubed with vermilion, one taking the basket and the other the *bhanda* on their head, dance before the couple, singing most obscene songs : meanwhile the respective mothers are cooking another big loaf of bread which will be eaten by everyone the next morning. It is now very late in the night and everyone retires to sleep. The next morning the bread cooked by the mother is taken to the *dari* or village spring where all the women paratke of it. When they have finished they bring a *ghagri* of water with some leaves of the mango tree in it. Meanwhile the bride and the bridegroom are in the house, being anointed with oil and turmeric by their respective sisters. When everybody has gathered under the bower, the boy and girl are brought out of the house, and a heap is made of a plough yoke, a bundle of thatching grass and a curry-stone. The bride and bridegroom are made to stand on the curry-stone, the boy touching the heels of the girl with his toes, and a long piece of cloth is put round them to screen them from the public. Only their heads and feet can be seen. A goblet full of vermilion is presented to the boy, who dips his finger in it and makes three lines on the forehead of the girl ; and the girl does the same to the boy, but as she has to reach him from over her shoulder and cannot see him, the boy gets it anywhere in his face, which never fails to provoke most hearty burst of laughter. The women throw then water over them and shout : "The marriage is done, the marriage is done!" whilst the bashful couple run back into the house. The people outside drink and dance. After half an hour another ceremony takes place to invoke the protection of the ancestors. A special mat is brought in the middle of the bower. Everyone then makes room for the two fathers, who come and sit on the mat having before them six leaf cups placed in a line, and two *sirkis*, or small earthen pots, with a small hole in the side. Three *handias*, or pots of rice-beer, are brought out, two marked with vermilion. The latter are for the Uraons while the third is for the *ghasis* or musicians. Rice-beer is prepared from the *handias* marked with *sindur* and is poured into the *sirkis*. Silence is made, and the fathers ask others in what village their respective forefathers were living. Then taking each a *sirki*, they pour rice-beer in three leaf cups, by reaching one over the arm of the other, invoking the shade of their forefathers and saying, "Render your shade and protection; we have settled this marriage satisfactorily among ourselves; now protect us, partake of the feast and drink the beer we offer you." They then spill some beer on the ground, and the leaf cups are distributed among the crowd and refilled until everyone has drunk of the *sinduria handia*.

All this time the boy and the girl are inside the house. They are now called out and made to sit together outside, where both mothers fondly cool them, by using a fold of their *sari* as a fan, and then anoint them again with oil and daub them with vermilion. They are then bound together by a knot made with their clothes, and they go round the company making *salam* to everyone. They then retire into the house again to allow the people to empty the new *handias* that have been brought. Every ceremony must always be well watered with the home brew. After some time they are again called out and have to assist at a brotherly ceremony called *bainajhara* or *bhawabhasur handia*. In this,

only the members of the family sit together apart from the others. A *handia* is brought, beer is prepared, and the bride brings a cup of it to the bridegroom's brother, and, instead of giving it in his hand, she deposits it on the ground in front of him. This is to seal a kind of tacit agreement that from that time the brother of the bridegroom will never touch the wife of his brother. As brothers have to live sometimes a very long time with their respective wives in the same house, this ceremony is not useless, and the practice of this ceremony becomes a custom as long as the brothers live together.

Then comes the last ceremony which is called *khiritengua handia* or the *handia* of the story. This is considered by them as being the true form of marriage which has been handed down to them by their forefathers. The boy and girl sit together before the people : two *handias* are brought, silence is made, and one of the oldest of the assembly representing the *panch* solemnly rises and addressing the boy first says : " If your wife goes to fetch *sag* and falls from a tree and breaks her leg, do not say that she is disfigured or cripple. You will have to keep and feed her." Then turning to the girl : " When your husband goes hunting, if his arm or leg is broken, do not say that he is a cripple, I won't live with him. Do not say that, for you have to remain with him. If you prepare meat give two shares to him and keep only one for yourself. If you prepare vegetables give him two parts and keep only one part for yourself. If he gets sick and cannot go out, do not say that he is dirty, but clean his mat and wash him." Then again turning to the boy he says : " If your wife gets sick, etc., as above."

By this time the great meal is ready : they eat, drink and make merry.

At night the girl is brought to the boy by her mother. She gives her up saying : " Now, my child, she is yours : I don't give her for a few days, but for ever ; take good care of her and love her well." A companion of the boy then seizes the girl in his arms and carries her inside the house of the boy. After depositing his burden he comes out and shuts the door. The day after the marriage they clean the house well and put diluted cow-dung all over the place to purify it from any stain contracted by any invidious stranger. Then they have the *palkhansna* (as described above) to remove from the couple any spell that might have been caused by evil-eyed men during the marriage ceremonies.

Polygamy is allowed but not in honour among the Uraons. There are very few cases among them, and they take a second wife only when the first one is barren or does not give birth to male children.

Divorce is a thing which is most easily settled by the boy or girl running away to the Duars or Assam. If, however, the husband and the wife remain in the country the rule is as follows :—

As long as the husband does not abandon his wife, the *panchayat* is powerless to pronounce the divorce and the girl cannot remarry as long as her husband does not remarry. When the boy agrees to be separated, then a *panchayat* takes place in which it is decided that the girl's parents have to give back what they received as the price of their daughter at the time of marriage. If they have children they belong to the father. If, however, by common agreement, the mother takes away the children, the father has to give them a cloth every year. In case, after some years, he would like to take them back,

he can, but if he has not complied with the custom of giving them a cloth every year, he has to make up for it and pay the mother what she has spent to clothe the children.

For *sagai* or second marriage, the ceremonies are very simple. The parents of the girl bring her to the house of her husband. Whilst they drink rice-beer the boy and girl are made to sit in front of each other, and they anoint each other with oil, the boy with his left hand and the girl with her right hand. After that, one of the women of the village comes and puts vermilion on the forehead of the boy saying, "Feed this woman: she is yours: accept this in her name." For the first *sagai* the price of the girl is Rs. $3\frac{1}{2}$; the second Rs. $2\frac{1}{2}$; the third Rs. $1\frac{1}{2}$; and subsequent *sagais* only eight annas!

Cases of adultery are comparatively rare among them. When offenders are caught they have to pay a heavy fine if they can, or if they cannot they get a smaller fine and a beating.

After marriage the brothers remain as long as they can in the house of their father with their respective wives. As their houses are very small they live huddled together like Noah and his family in the Ark. Of course there are some bickerings among the women, but on the whole the system works admirably, and those are the houses which prosper best in which the brothers remain the longest together.

Their law of succession, of course, is not very complicated. The eldest boy gets about one-fifth more than the others, who get less shares according to age. When one of them dies his wife may choose to remain in the house of her father-in-law or go away. If she remains she is treated like one of the house. If she goes away with the child she gets the share of her husband. But if the boy dies or if she remarries, the boy's share returns to his uncles, in the first case to remain their property, and in the second case to be given back to the boy when he marries. If she goes away without taking the boy with her she gets nothing at all. If a boy follows his mother when she makes *sagai* he has no right to the fortune of his stepfather even if he dies without male issue, but he is entitled to his *pogri* like a *ghar damad*. If a boy is *ghar damad* in a house where there are only girls, and if he remains working in the house of his father-in-law till he dies, he has a right besides his *pogri* to a pair of bullocks, one cow with a calf, plus the hatchet, plough, *khodali* and sickle with which he has worked. In all their hereditary disputes they can have recourse to the *panchayat*, to whose decision they are bound to adhere.

The money remains always in the keeping of the master and mistress of the house, the father or mother of the family. They bury it either in the house or in the garden, and sometimes in the fields, no one knows where. Generally, when they feel that they are dying, they call their pet son and tell him where the treasure is buried. Very often they say nothing, so that much money is lost in this fashion. They believe that after death, the Pachbal or the light shades of the ancestors like to come and sit on these treasures, and it seems they sit very hard. When the children want to unearth the treasure, they say that they can reach the vessel containing the rupees, but as the work of excavating is progressing so the treasure is sinking deeper and deeper as if dragged down by an invisible hand. But it is only in time of great distress that they will dare to try and get at hidden treasure, the secret of which has not been revealed by their parents. There is much

superstition about it, and a common saying among them is: Can the money of the Pachbal be of any use?

V.—Character.

The Family.—No one can say that conjugal love is unknown among the Uraons though it becomes only demonstrative in time of sickness. There are indeed very happy couples who are very much attached to each other. The woman is far from being a slave. She has nearly everything to say to the management of the house, and can assert her own authority when her husband tries to interfere in her business. Both are exceedingly fond of their children, and it is admirable how in time of famine they deprive themselves of everything and starve themselves, eating only roots and jungle fruits to be able to give some rice to their children. Their fondness goes so far that they never beat them and very seldom say a harsh word to them. This system of course upsets the *rôles*, and the children instead of doing the will of their parents, impose their will on them. Up to six or seven years of age they sleep at home, and many a European would be surprised if he could penetrate into the interior of an Uraon family during the long winter evenings. The father is seated on a mat with his children around him, and he propounds riddles to them. The mother is cooking the supper, but not losing a word of what is said, and her face is beaming with pleasure when she looks at the puzzled faces of the little ones. Those riddles are nearly always the same, and have been handed down from generation to generation; but they are as interesting to the children as the stories of Blue Beard, etc. Some of them are also manufactured on the spot.

Here are some specimens:

Young, he adorns himself with flowers; old, he stands stiff with a sword in his hand. What is it? The answer is *kurthi* a kind of pea (*Dolichas uniflorus*).

A gentleman goes on his way carrying a tail in front and one behind. What is it? Answer: an elephant.

A boy perched on a tree with his face marked with smallpox. What is it? Answer: Jack fruit.

When they are tired with this, the most fearful stories of devils (*churel* or *chordwa*) are related to them.

Uraons are considered good cultivators, and they are known to be very good coolies in the tea-gardens, as coolie recruiters get a higher price for an Uraon than for any other labourer. In cultivating the ground they use all the implements that are common all over India. They are most of them occupancy ryots, but some of them *bhuinhari* or rent-free lands, and are called Bhuinhars. These are the first settlers in the village. They have also another kind of land called *korkar*, i.e., paddy-fields which they have made themselves and for which they have to pay only half rents. In some districts a queer custom exists. When a zamindar gives land to a ryot to cultivate he puts in his hand a small pebble called *goti*. This is called *goti dena*, and when the ryot does not wish to cultivate that land any more he gives back the pebble. This is called *goti ghura dena*.

The striking feature of their character is their joviality. When they are together they always laugh and are in the most excellent spirits. Their cheerfulness makes them

swallow many a bitter pill with a light heart, and they appear to be happy even under the most trying circumstances. They appreciate and enjoy a good joke, and, after a short acquaintance, feel quite at ease with Europeans. Well trained and well taken care of they might become good house-servants. But they should not be treated harshly like the Hindus. Strictness tempered by much kindness on the part of their master would make them devoted servants. Like their brothers, the Madrassis, they seem to be born cooks. Any Uraon boy in a few months can become a decent cook. Colonel Dalton remarks that their adaptability to other ways and customs is something wonderful, and this is very true. It goes so far that their exterior appearance changes entirely; even the colour of their skin, which is naturally very black, becomes tawny when they live for a long time among fair-complexioned people. You see them laugh sometimes at people who come back from the Duars after a long sojourn there, because they look like Lepchas. They have even remarked themselves that Uraons who are generally beardless wear long whiskers and look like Muhammadans when they have lived for a long time among them.

The Uraon boys seem to be for a time very quick in learning and very intelligent. But this impression does not last long. In a short time they master reading, writing and simple arithmetic, but after that they come to a standstill. Their brains seem to have become filled to the brim. Anything added to this, for most of them, is useless and simply overflows. Boys and girls up to a certain age have decent and even agreeable features. But the women after bearing one or two children become shapeless, and the men, specially those addicted to drinking, become real horrors. In height they are not much above the average, but there are some well-built men among them. Many of them are real dullards who cannot even add two and two by counting on their fingers. Others always add with the help of small pebbles or the phalanges of their fingers. In such a state one can fancy how easily they become a prey to the vexation of the local police and the exactions of the zamindars. They are quite helpless, as they cannot explain what has happened. Even when asked plain questions, and in the courts of justice, in cross-examination, they are sure to make a mess of the most simple cases. The best way to mete out justice to them is to condescend to listen to their complaints personally in a kind of paternal and *quasi* official way. They are not altogether ungrateful, and the memory of officials like Dalton, Power and Streatfeild will live among them.

Language.—There is not the least doubt about the origin of their language being Dravidian, though it appears to be entirely different from the parent stock. In their long peregrinations they have adopted a great number of foreign words and expressions. Their pronunciation even has suffered radical changes, most probably on account of their long intercourse with the Muhammadans, just as the pronunciation of Spanish has suffered from the long intercourse of the Spaniards with the Moors. They have a strong predilection for gutturals and aspirates unknown to the Dravidians. This is specially noticeable in the Kh, which has two sounds—one deeply guttural, which is identical with the Spanish (*jota*) in *joven*, or the Arabic (خ): this might be represented by the Greek (χ). The other is pronounced like the ordinary Kh in Hindi. The conjugations of their verbs also have undergone great modifications. In the past tenses they make use as

auxiliaries of the Hindi verbs *lagna* and *rahna*. Thus :—*as ana lagiyas*, he was saying, and *ankan rahdan*, I have said.

Most of the words they now use have Hindi roots or are the same as those they use in Sadani, or the *lingua franca* of Chota Nagpur. They all know Sadani, even the women; and their language seems doomed to perish soon. In some parts of the Province they have forgotten it entirely. The Uraons living close to Ranchi speak Sadani and Mundari. The people of Biru speak Sadani more than Uraon, while some of those that live in Sirguja speak only Sadani. There is a great resemblance between the language of the Uraons and that of their brothers the Malé of Rajmahal. Any intelligent reader who knows Uraon can easily understand any book written in Malto.

Explanation of some phenomena.—The earth of course is flat, otherwise how could men walk on the other side with their head downwards without being thrown into space. To keep her in position, they imagine a rather complicated contrivance. She rests on the back of a tortoise which is caught very firmly between the long legs of a crab. When the tortoise gets tired and wants to change her position an earthquake takes place, but the crab is always there attentive to her duty and saves the world from a catastrophe. She catches the tortoise very firmly with her claws and never allows her to move too much.

The sun is alive, otherwise how could he make his rounds every day. The moon also is alive, and has many children, namely the stars. Formerly the sun also had lots of children, but he was induced by the moon to eat them up. Hence the enmity that exists between them. This is how the moon effected her purpose. One day the moon invited the sun to dinner and gave him a good meal of sweet potatoes cooked in butter. These were so good and tasty that the sun asked her what it was, as he wanted to eat the same thing again. The moon shamefacedly confessed that they were her own children. "Well," said the sun, "my children must be as good as yours." So saying he departed and killed them all. When he began to eat he found out that he had been cheated, and came down in a rage to punish the moon. She, however, seeing him coming, hid behind a mango tree, but the sun cut her with a sword, cursing her at the same time, saying: "Now you shall keep that cut all your life. You will try to get cured every month, but as soon as you think you are all right, the cut will reappear and go on increasing." From that time we have the different phases of the moon, and the shadow of the mango tree remains printed on her face. From that time, also, the moon keeps away from the sun and appears only when she knows that he is gone to sleep.

Now let us not suppose for a moment that they look upon these explanations as humbug. These strange stories satisfy their simple minds as much as the most complicated astronomical theories satisfy ours. Tell an Uraon peasant that the moon is perhaps as big as the top of the banian tree that is at the entrance of his village, and some of the stars might be even bigger. Out of respect for you, he will pretend to believe you, but follow him stealthily till he meets one of his own kind and listen to the good and hearty laugh they will have together at your stupidity and the stupidity of all the *sahibs* to believe such stories. They will laugh much more at your theories than we can laugh at theirs. A whirlwind is a *bhut* that has gone mad. A nightmare is a *bhut* trying to smother a man, etc. etc.

Handia.—This is an item which should not be forgotten in notes about the Uraons, as this plays a great rôle in their private life. It is prepared in this way: they put rice in an earthen vessel or *gugri*, pour over it just as much water as is required to cover it and boil it. When it is nearly cooked they take it off the fire and spread it on a mat to dry. A kind of yeast called *ranu* is then mixed up with it, and the whole shut up in an old earthen vessel. The secret of making good *handia* is to have this last pot as well baked as possible, and the old matrons choose always an old one that has been used for a long time in cooking rice. After five or six days the *handia* is ready. They pour water on the rice, let it soak well, and afterwards strain it. A *handia* containing three seers of rice will yield three gallons of very good beer, so that the Uraons can easily get drunk without ruining themselves It is a great pity that they cannot indulge in the home brew moderately, as it is a very healthy, strengthening and refreshing drink. *Handia* is as intoxicating as ordinary beer, but has not the disastrous effects of *daru* or native gin. A man under the influence of *daru* becomes a perfect wild beast solely intent on mischief; whilst a man intoxicated with *handia* seems to forget all his miseries, becomes talkative, and seems to enjoy life. Look at a group of those wild Uraons sitting before you; they look like a flock of sheep or a herd of buffaloes at rest. Their look is vacant; their heads drooping. Ask them some questions and scarcely one or two will be able to talk reasonably. Bring one *handia* among them and you will see all the eyes fondly following it, and knowing smiles brighten their listless faces. As soon as they have tasted the beer they become different men: they begin to talk and express their opinions freely, and where you could not get any information, you will get more than you wished for. The old *handia*-drinkers, and they are legion, seem always to be half-asleep, and only awake when under the influence of their favourite drink.

The Uraons are very sociable beings, and like to enjoy life together. They are paying visits to one another nearly the whole year round. They call this *pahi*, and it assumes the proportions of a national institution. In these the *handia* always plays a great part. Any man, who would presume to receive visitors without offering them a *handia*, would be hooted and insulted by his guests, who would find a sympathising echo from all the people of the village. One may say that from the time of the new rice at the end of September to the end of the marriage-feast, *viz.*, till March, there is a continual going and coming of *pahis*. For a marriage-feast 40 *handias* are prepared by the groom's father, and all the people of the village that can afford it supply one also. Each *handia* gives about three gallons of rice-beer, so that in one day and a half, in a village of 30 houses, about 200 gallons of rice-beer are despatched. The Uraons are famous for their dances. They delight in spending the whole night, from sunset till morning, in this most exciting amusement, and in the dancing season they go from village to village. They get, as it were, intoxicated with the music, and there is never any slacking of the pace. On the contrary, the evolutions seem to increase till very early in the morning, and it sometimes happens that one of the dancers shoots off suddenly from the gyrating group, and speeds away like a spent top, and, whirlwind-like, disappears through paddy-fields and ditches till he falls entirely exhausted. Of course it is the devil who has taken possession of him. One can well imagine in what state the dancers are at the first crow of the cock, and when

l'Aurore avec ses doigts de rose entr'ouvre les portes de l'Orient," she finds the girls straggling home one by one, dishevelled *trainant l'aile*, too tired even to enjoy the company of the boys, who remain behind in small groups still sounding their tom-toms at intervals as if sorry that the performance was so soon over. And wonderful to say and incredible to witness, they will go straight to the stall, yoke their bullocks, and work the whole morning with the same spirits and cheerfulness as if they had spent the whole night in the most refreshing sleep. At 11 o'clock they come home with their bullocks, eat their meal, and take a nap this time with a vengeance. They are like logs of wood stretched in the verandahs, and the report of a cannon would not disturb their heavy slumbers. It is only at about 2 o'clock that, poked and kicked about unmercifully by the people of the house, they reluctantly get up with heavy eyes and weary limbs to resume their work. How they can stand this for a long time is beyond comprehension, but such a life cannot help playing havoc with the system, and as they live too quickly their life is quickly spent. You find very few old people among the Uraons. At about 40 they have no vitality left in them, and they begin to vegetate.

VI.—Villages and Houses.

In some parts of the country the Uraons live in large villages consisting of 100 and even 200 houses. These are huddled together in the most perfect disorder: there are no thoroughfares, but only small little bits of winding and crooked paths—a most perfect labyrinth leading you to an infinite series of *cul-de-sacs*, each one more puzzling than the last. A European who finds himself in one of these mazes would find it impossible to get out of it without a guide. Nothing more monstrously filthy can be imagined than one of these villages in the rainy season. As it is impossible to dig any ditch in such a disorderly heap of houses, the rain collects and forms stagnant pools. The cattle, the pigs (every Uraon must keep five or six pigs) have very soon made a perfect quagmire through which everyone has to wade knee-deep. Imagine the sink of filth this must be, and what a mixture of nose-offending matter gets accumulated in four months. But the pigs and the children delight in it; and you can see them wallowing together side by side in perfect harmony.

The houses are very small and low, most of them consisting of four mud walls, 15 feet long, seven feet high, and six feet broad, surmounted by a thatched roof. In the middle of one of these walls there is a hole $4\frac{1}{2}$ feet high, which is the door; it is level with the ground, whilst on both sides there is a raised but hollow verandah under which a whole family of pigs are always fighting and screaming. Inside the corps the *logis* is divided into three parts: on one side the bullocks and the goats separated from the middle room by three bamboos put horizontally, and resting, on one side, in the wall and, on the other side, attached to a pole. Near the pole there is a small door of trellised bamboos. On the other side is the granary, and a place for pots and pans and all kinds of utensils where they lie heaped up together. In the middle is a small room left for the people to sit in and prepare their food. There are generally three *chulas*, or hearths. No Government in the time of any epidemic ever invented a more perfect system of fumigation. The *chulas* are lighted with half-dried wood, the water is boiling, there is no chimney, no hole

except the door, and the smoke and steam soon entirely fill the whole compartment. Natives themselves choke and cough, and bitter tears roll down their cheeks. As for a European, it would be death by suffocation if he had to remain half an hour in it. Added to all this is the stench of goats and the smell of cows and dirty men blending together, and you will have an idea of the ordeal through which the nostrils have to pass. The entrance is closed by two big revolving planks roughly hewn out of the trunk of a tree. They are a most heavy and unwieldy concern, too, to the fingers that are caught between them, when with a screech and a bang they come together. On the upper part you have a similar plank to support the wall above the door. This is called the *kaparphora*, *i.e.*, the forehead-breaker. Never was a name so well applied. The natives themselves are not in danger of breaking their heads, simply on account of their hardness, but for a European who would deem it polite to go in bare-headed his fate would be sealed. As for the missionary, who has often to go and visit his people in time of sickness, his delapidated *topi* bears witness to the numerous encounters it has had with the famous *kaparphora*.

VII.—Miscellaneous Customs and Beliefs.

Gaon Banowri.—The *gaon banowri*, or settlement of the village, is the ceremony that is resorted to, to put everything right in the village. An epidemic for man and cattle can be brought about

(1) By the *khunta bhuts* of the village who club together and revolt against Pat because they have not been satisfied with the sacrifices offered to them at the three great feasts of Sarhul, Kodleta, and Kanhiari.

(2) By a band of foreign lawless *bhuts* coming like a band of gipsies to steal and plunder.

(3) By the *bhuts* of the neighbouring village.

(4) By *bhuts* brought in by *dain besahis*.

In all these four cases several *ojhas* are called to practice the *ghosna*—"*bhut ko harane ke waste*"—to subdue the *bhuts*. The work is very often very hard, and they have to toil at their winnowing-fans for several days. At last, when the virulence of the sickness has subsided, they declare that they have found out the *bhuts*. In the first case, namely, when the epidemic is caused by the *khunta bhuts* of the village, the Pahan is held responsible, and he has immediately to satisfy his clients. Sacrifices are then offered to Pat, Duharia and other *bhuts*.

In the second case, the foreign *bhuts* are caught, shut up in a *singhi*, as has been explained above, and carried away very far to be thrown into a waterfall.

In the third case, the Pahan of the next village to which the *bhuts* belong is called. His *bhuts* are shut up, not in a *singhi*, but in a leaf of *sakua* with *arwa* rice. Fowls are given to him, and he goes back to his village with his *bhuts*, whom he settles down in their old places by offering them sacrifices.

The fourth case happens when the epidemic lasts very long and the *ojhas* have been unable to subdue the *bhuts* by their *mantras* and incantations; then it is certain that

dain and *dain besahis* are at work ; their *mantras* are so powerful as to enable the *bhuts* to laugh at the *ojhas* "*Inde irae.*" In some cases, when the *ojhas* and the people have not lost their heads, and are not over-excited, they have recourse to the *kansphandi* and the *sokha*, in the manner already described. But when the epidemic has been very virulent and many people or cattle have died, their rage knows no bounds, and they must have victims at once. Full scope is then given to the inventive powers of the *ojhas*, provided they can supernaturally show the culprits. Two examples will suffice to show how they proceed in such a case.

1st.—All the people of the village are called and made to sit in two rows, the *ojhas* sitting in the middle. Clods of earth, each representing a man or woman, are placed at some distance, and a small boy sits near the *ojhas* with his hand resting on a stone. The *ojhas* then begin to mutter their *mantras* and chant their incantations, and stir the rice in their winnowing-fans. After an hour or two the stone begins to move and drags the boy to one of the clods of earth. They then renew the operations till the stone refuses to move. Those that have been designated in that way are then caught bound and beaten in such a way that they very seldom escape with their life.

2nd.—The people are called and made to sit so as to form an immense circle, in the middle of which the *ojhas* sit. A handful of rice is distributed to everyone, and a he-goat is bound close to the *ojhas*. After one or two hours of *mantras* and incantations, the people are told to stretch out their hands with the rice resting on the open palm in front of them. The he-goat is then let loose. He goes sniffing about, and when he finds the *dain besahi* eats of the rice,—those that are designated in this fashion are sometimes buried alive, a custom which still exists in the Native States, though it has entirely disappeared in Lohardaga and Palamau. Cases of beating to death are frequent everywhere.

In connection with cattle diseases, they have a custom which bears some resemblance to the *Rog Khedna*. When they see that their cows and bullocks are getting lean and sickly they have recourse to a means which is well calculated to be very effective. The *goala* or herdsman is called, and the people assemble, armed with sticks. They detatch a big wooden bell from the neck of one of the bullocks and tie it to the neck of the *goala*. Then follows a scene never to be forgotten by the herdsmen. All heap insults upon him, and threaten him with their sticks. It is indeed a most ludicrous sight to see the herdsman taking to his heels with his big bell dangling round his neck, followed by a mass of black fiends howling behind him. Arrived at the boundary of the village he lets drop the bell. A sacrifice is offered, and the cattle are bound to get all right.

There remain still some practices which it is difficult to classify. For example, the *pujas* of Chandi and Barpahari and the two feasts of Sohrai and Karam with the two *bhaiaries*. Chandi is the goddess of hunting—she is represented by a stone at the foot of a tree. Chandi is a queer goddess that seems to rejoice in the familiarity of young unmarried boys. There is a day on which the boys have to come and make water near her stone, and she receives her *puja* only from them. Eight days before a hunting expedition the boys assemble near the stone representing Chandi, and one of them is

chosen according to one of the three methods used in choosing the *pahan* or *baiga*. The boy selected has to come every night quite naked, and offer to the goddess *ghi* and incense, and on the day of the expedition he sacrifices five fowls to her.

Sohrai.—This is properly the feast of the cattle, as the people want to show their gratitude to the animals who have worked the whole year for them. But as they have worked together they must also feast together. On the eve of the ceremony a lamp is kept burning the whole night in the stable, and a cock of different colours is offered in every house in honour of Gaureya. When offering the sacrifices they join hands and say this prayer: "O Gaureya, kind Devata, look after our cattle: when they go to graze in the jungle, change the tiger into an ant-hill; change the ravines into a smooth path and snakes into ropes."

The next morning they anoint with oil the heads and horns of all the bullocks, hang garlands of flowers round their necks and put *sindur* on their forehead. The whole day is then spent by the people in rejoicings. No work is taken from the bullocks, and they are given a good feed of corn. In the evening there is a *panchayat* in which the *goala* is rewarded. They settle how much he has to pay for the cattle that have been lost or impounded through his negligence.

Barpahari is a *puja* that has been brought in by the Bhuinhars or the Mundas, who separated from the main stock and have lost their language. Barpahari is nothing else than the well-known Marang Buru, or the great mountain of the Mundas. The man who offers the sacrifices goes to a piece of *tanr*, or highland, accompanied by the *panch* of the villages. There he offers a white cock to Darmesh and two fowls to Barpahari.

The Uraons can never forget their Bhuinhari village, or the place where their forefathers first settled, nor the deities of that place. Every year they have the Phagun Bhaiari and the Hariari Bhaiari. On these two days there is a family *puja*; and all the people of the same family living in the same district assemble at the house of the eldest representative of the family.

The man who has to offer the *puja* is chosen according to one of the two methods for choosing the *baiga*, and he offers a sacrifice of several fowls to Pat and the other tutelary divinities of their Bhuinhari village. A fowl is offered also to Pachbal in the customary way. The blood of the victims is spilt in a winnowing-fan, and this with the knife that has been used for the sacrifice remains hanging in the house, and is kept solely for that purpose. Outsiders may be invited, and are even allowed to eat of the fowls that have been sacrificed, but the head, liver, wings, and the legs are exclusively reserved for the members of the Bhaiari.

Karam.—The Karam is a Hindu feast, but as the Uraons and other aboriginal people have taken to it, it is as well to say a word about it. The Karam tree is a godling of the Hindus. The Uraons celebrate this feast a month earlier than the Hindus. The man chosen to officiate at the ceremony, who represents the *panch*, goes from house to house, and performs the *palkhonsna*. On the eve of the day fixed, the boys and girls have to fast, and in the evening they go together to the nearest jungle, and cutting a branch of the Karam, bring it back, dancing and singing in triumph. They plant it in the middle of the *akhra* or dancing place, and adorn it with flowers and lights like a

Christmas-tree. The whole night is spent in dancing round it, and the next morning it is thrown in the river.

The Nagmatia.—We now come to the last but not the least interesting of these personages who play such a great rôle in the inner life of the aborigines of Chota Nagpur, *viz.*, the *nagmatia*, or snake-conjurer. After all that we have described it might be thought that they had taken all possible precautions to ward off sickness and protect themselves against every evil inherent in human nature. But it is not so. There are evils which evidently do not come from the *bhuts*, and these must be thwarted also. Such are bites of venomous animals—snakes, scorpions, centipedes, etc.; bites of dogs, jackals, wounds, sore eyes, earache, abscess, toothache, etc. The healing of all these is the work of the *nagmatia*.

As there are schools for the *ojhas*, so there are schools also for the education of *nagmatias*, but they are not nearly so numerous. The work of the *nagmatia* is still more complicated than that of the *ojha*, and he has to learn many more *mantras* and incantations. When a certain number of boys in a village have made up their mind to learn the art, they set to work and build a house or school-room close to the house of the *guru*. There they assemble every evening for several hours, and their education will last for one or two years, according to their progress in learning.

On the first day they have the ceremony called *Sirnicharana*. The *guru* prepares a mixture of milk, *til*, *gur*, and *arwa* rice, and gives each pupil a handful to eat raw. On that day they have to fast. Every day before beginning to learn they have an invocation to the chief *gurus* and Deotas of the craft. The invocation is sung in chorus, and each of the eight leading *gurus* or Deotas is invited one after the other to come and sit among them. Kanru is invited to sit on a *nag patia*, i.e., a basket in which snake-charmers keep their cobras. So also is *newra*, or the mongoose, deified. The others are invited to sit on a golden stool; their different places are marked out in the school-room, so that whilst they are singing the pupils can follow in mind each Deota, stepping in and going across the room to take his seat.

Here is the song; it will be seen how graphic it is, and how likely to impress their mind.

"Kawna guru mora awat hobain
Duwaria, duara duara chhori na de."

(Who is my *guru* that may be coming: *duwaria* (porter), do not let the door shut). The invocation is supposed to take place just when the last pupil has stepped into the school-room, and the porter has still one hand on the door to keep it open. These doors are heavy planks, which of their own weight swing to with a bang. Hence the necessity of someone holding it whilst the pupils are going in. This is repeated twice or thrice.

"Kanru guru mora awat hobain
Duwaria, duara duara chhori na de."

(It may be my *kanru guru* who is coming—porter do not let the door shut.)

"Guruji baba ji ai gelain pahun
More Kanru guru de rakho
Baise ke nag phenik pitia."

(My respected *guru*, my respected father has come for a visit; give to my *guru* a cobra basket to sit upon.)

Exactly the same song is sung for *newra* and also for the six others, the name of the *guru* alone being changed.

"Guru ji baba ji ai gelain pahun
More Madho guru de rakho
Baise ke sone ke machlawa?"

(My respected *guru*, my respected father has come for a visit; give to my Madho *guru* a gold stool to sit upon.)

The eight great *gurus* or Deotas are Kanru, Newra, Madho, Deogan, Hanuman, Narsingh, Bhainsasur, and Bhuinphar. These are the Deotas who produce trances. The classes always begin on a Sunday. After learning for six days, *i.e.*, on the next Sunday, they have the ceremony called *Painsaru*. They go to the jungle with their *guru*, and everyone cuts a handful of *sabai* grass growing on an ant-hill (no other will do). This is to make a whip, which everyone keeps with him as long as his education lasts. The incantations being very monotonous and lessons continuing till very late in the night, the pupils are very often tempted to sleep. But when anyone is seen to be nodding, all the others strike him with their whips. When everyone has collected *sabai* enough, they return to the school-room, with mud taken from an ant-hill, and in the middle of the room build an erection resembling the stone used by the natives for grinding wheat. A piece of iron curved to the shape of a cobra and a trident with the middle prong protruding are stuck in the middle. This acts as an altar, and every day everyone has to bring fresh flowers to decorate it. On the day of the *Painsaru* a sacrifice of two fowls is offered to the chief deified *guru*, and the blood of the offering spilt is on the altar. Near it on the floor they burn a mixture of frankincense, *ghi*, and *gur* which is called *gandhup*. The whole day the stricktest fast is observed, and the morning is devoted to going about the jungle with the *guru* and learning the medicines they have to use. Every Sunday the same routine is followed. In the evening every pupil has to come and bend for some time before the altar and inhale the fumes of *gandhup*. Then begins a scene which is also repeated every Sunday. All begin their incantations and *mantras*, singing moving their heads and clapping their hands in tune with the music. Their invocations are to the eight deities that produce trances to come and take possession of them. After some time, when one of them begins to show signs of possession, they all sing together the following song:—

"Bharua to bharua bhori gaio
Isar Mahadeo na pawe
Kunia chata pari gail."

(Possession, possession, be so complete that the god Mahadeo cannot increase it—that the waters of the well be exhausted.) The music is so soft, so sweet, so insinuating with such a perfect gradation of feeling, that at the last word the singer seems to softly swoon away into the land of oblivion.

There are five different kinds of possession according to the different Deotas that

cover their disciples with their shades. The man possessed by Bhainsasur leaves the room immediately and goes treading heavily along to the next quagmire where he remains wallowing in the mud like a buffalo. After an hour he comes back besmeared with mud from head to foot, and Bhainsasur through the mouth of the possessed pupil tells the *guru* that he wants to go away. He is led to the place where the *gandhup* is burning, inhales the fumes, and comes back to his senses.

The man possessed by Hanuman, or the monkey deified, begins immediately to run along the rafters of the school-room, imitating the monkey in everything—his cries, his gestures, his grimaces. Those that have not as yet been possessed enjoy the joke and ask the guru to call Narsing, or the tiger deified, to take possession of another disciple. Then there follows a scene as ludicrous perhaps as can be imagined. The man possessed by Narsing runs about the house on all fours roaring like a tiger and trying to jump on the walls to catch the monkey. No pantomime could be played more perfectly, as each unconciously shows all the characteristics of a tiger and a monkey in a stage of nature. The agility of the man possessed by Hanuman is something most wonderful. He runs from rafter to rafter, jumps on the wall, then again on the rafters showing the same fear and producing the same noise, as a terrified monkey, till at last, seeing the door open, he jumps on the floor and runs out to the nearest tree followed by the tiger. Here they remain for some time, the tiger running round and round the tree and the monkey going from branch to branch. After some time they come back, and Hanuman and Narsing, through the mouth of the possessed pupils, ask the *guru* to be allowed to depart. He leads them to the *gandhup*, and makes them inhale the fumes, and they come back to their senses. The man possessed by *Newra* goes sniffing about the house and searching here and there like the mongoose. The possession produced by *Deogan Konru*, *Madho* and *Bhuinphar* are similar. They dance and dance, in the queerest fashion, until they are relieved by the *guru*. These scenes are repeated every Sunday: sometimes two, sometimes three pupils fall into a trance, whilst the others enjoy the joke. On special days only, they all become possessed at the same time, and the scene that follows can be better imagined than described. All the time the *guru* keeps on singing *mantras* and incantations.

There is no monotony in the scenes that take place. The *guru* can vary them as he pleases with the mongoose and the monkey, or the buffalo and the tiger, and so on. So that Sunday is always a great day of recreation for the pupils. Hanuman, of course, is their favourite. He has been known to go into a garden, and finding no other fruit but capsicum to eat a whole handful of it. But this he cannot keep in his stomach, and as soon as he comes back to his senses he vomits it out.

They say that sometimes *bhuinphar* takes a fancy to one of the pupils and then something wonderful happens: he seems to learn all the *mantras* and incantations by intuition or revelation. A pupil so specialised seems to be always in a state of hypnotism, and sings continually *mantras* and incantations. It is recognised that *bhuinphar* has taken possession of him for good, and he leaves the school and becomes a *bhagat*. He lives like a *jogi* separated from the tribe, does not drink any intoxicating liquor and eats no meat. He grows a thick tuft of hair on the top of his head, which he

besmears every day with cow-dung. After some years this acquires tremendous proportions, takes a yellowish hue, and, as he has to tie it, he seems to be walking with a small bundle of hay on his head. Such a man becomes a *sokha*—a kind of clairvoyant of the tribe. It is impossible to treat *ex professo* of the *sokha*. Like all the mysterious personages of his kind he is a very reticent man, and what is going on between him and *bhuinphar* must remain a secret.

Enough of this digression. Every Saturday, after eating their evening meal, the pupils spend the whole night in learning *mantras* and practising the *jharna*. The next morning they go to the jungle, where the *guru* shows them all the medicinal plants they have to use, and explains their properties. As they have to fast, they do not go home, and the whole day is spent with the *guru*. The amount they have to learn is really incredible. They have to learn by heart more than two hundred *mantras* and incantations, some of which are very long and often without any meaning. They must know the name of all the *gurus* and *deotas*; and these are very numerous. The names of all the snakes ought to be very familiar to them, and they ought to know what kind of medicine is to be used in every case. They learn all the tricks that are generally shown by snake-charmers. They can make a cobra stand, raise its head, display its hood, and crawl just as they like. They can make a snake come out of its hole by singing incantations only: this takes a pretty long time, but with the *nagdan*, or the instrument used by snake-charmers, they can make any snake come out quickly and follow them.

As the chief work of the *ojha* is the *ghosna*, so the work of the *nagmotia* is the *jharna*, or the sweeping away of the disease or poison. The insignia of the *ojha* are a winnowing-fan and a lamp, and the insignia of the *nagmotia* are a blade of long grass (*kher*) one foot long and a *nagdan*. In the *jharna* the *nagmotia* keeps the blade of grass in his hand, and, whilst he is chanting his incantations and muttering his *mantras*, he passes it over the seat of the sickness and moves it, just as if it were a fan, with a downward motion, giving a small jerk at the end, taking care not to touch the body. By this means he brings down by degrees the disease or the poison, from the place originally infected, to the toes or fingers, and from there make it pass into the ground as if it were an electric current. Sometimes also he makes it pass into the blade of grass and blows it into the air. They ascribe to the *jharna* the most powerful power, and the blade of grass, like a magnet wand, seems to develop such magnetic power that it can draw anything away. At the end of a year they have to pass their examination and have to prepare themselves for it by a fast for two days. Every pupil's *gun*, or magnetic power, is duly tested and literally weighed in the balance. But this is so extraordinary a performance, that it is impossible to believe it, and the thing must be ascribed to a trick of the *guru* to inspire his pupils with the most unlimited confidence and faith in their art. A balance is brought in, and as many stones weighing exactly one seer (such as are used in the bazar) as there are pupils. All are properly weighed and tested. Each pupil then takes a stone and has to practice the *jharna* on it for three hours. They all, of course, try their best and sweat over their task. At a signal given by the *guru* all stop, and the stones are weighed again and the deficiency in weight made up with pice. They say

that a man has attained the apogee of his art when, after a three hours' *jharna*, he has caused his stone to lose ten pice in weight. These things at first sight appear to us impossible, but we are forced to believe them when, after taking all our precautions not to be cheated or influenced by hypnotism, we see them with our own eyes. To them, however, faith is not so difficult. All that is necessary is to find the proper *mantra*. Give a *nagmotia* the proper *mantra*, and he will set to work at once and begin his *jharna* to bring down the sun, the moon and the stars. Like the old Romans he would say :—

"*Carmina vel coelo possunt deducere lunam guru.*"

After passing their examination to the satisfaction of the *guru* they get their diploma. The examination takes place always on a Sunday. They all go together to the nearest river, and the *guru* chooses a shallow place where the water is just trickling over the land. There he makes as many furrows as there are successful candidates. Then they stand in two rows, every one over a furrow with the *guru* in the middle. Whilst the pupils are singing together a song, in which they extol their power over that of the *guru*, the latter sprinkles each one with water taken, successively, from the furrow in which he stands, his position being determined according to the order of merit. After this they return to the school, where a he-goat is sacrificed to the chief *gurus* and *deotas*. The *guru* then calls his wife ; and these two sit face to face on the floor with their legs stretched on the ground. Each pupil in turn, in the order of passing the examination, comes and sits on the lap of the *guru*, who dips his finger in the blood of the offering and makes with it a big line on the forehead of the pupil. From the lap of the *guru* he passes to the lap of the *guruwain* who does the same. From this time they can practice their art. It is a great feast in the village when the pupils receive their diplomas, and it is the *guru* who takes them home one by one.

When a man has been bitten by a snake the *nagmotia* is called, and the first thing done is to ascertain what kind of snake has caused the injury. To do this he has two means. If the snake is close to the house, or if the people have seen him going into a hole, he gets him out by singing his incantations or blowing his *nagdan*. When the man has been bitten in the fields, or far from his house, the *nagmotia* discovers him through the blade of grass while proceeding with the *jharna*. As the *ojha* calls all the *bhuts* by their names so the *nagmotia* calls all the snakes by their names, and when he pronounces the right name, he says that he feels something like an electric shock in his hand. Then he applies the particular medicine to the wound and gives his patient some roots to chew. In some cases he fills his mouth with three different kinds of medicinal herbs, applies his lips to the wound and sucks up the blood which he spits out. But this is rare ; for, whether due to the effect of the medicine he keeps in his mouth or to the effect of the poison, the result is that he loses his teeth.

After these preliminaries the real *jharna* is begun—an invocation to all the *gurus* and *devtas* of the craft—and then follow his *mantras* and incantations. After some time he asks the man how far the poison has gone up. If the man has been bitten in the foot or leg, and the poison has reached the trunk, he brings it down to the thigh where he makes a ligature ; from the thigh he brings it to the knee, to the ankle and the big toe, each

time making a new ligature, till finally he makes it pass from the toe into the ground. But this is not an easy task, and the *nagmotia* has sometimes to work the whole night. Even in that case his repertoire of incantation is never exhausted. Is it the effect of the medicines alone or the effect of the medicines and mesmerism combined? The fact is that they often succeed in saving the man's life. When they do not succeed they never confess the powerlessness of their art, but say it is beyond their power as the bite has been caused by a *bhut!*

It would be tedious to relate how they proceed in all the sicknesses that are within their sphere. Four of their beliefs, however, are rather interesting.

When a man has sore eyes, the belief is that it is due to ashes and smoke in their eyes. The story runs thus :—

Mahadeo and Parbati were one day burning the jungle to prepare a spot for cultivation. A strong wind arose and drove some smoke and ashes into Mahadeo's eyes. Taking them out he cursed them and sent them into the world. They are still flying about and are the direct cause of all sore eyes. The *nagmotia* comes in the evening, takes the man alone outside and tells him to look at a star. Whilst the man is looking at the stars, he takes some ashes, which he has brought hidden in his belt, between his fingers and passes them before the eyes of the man, all the time singing *mantras*. When this is over he tells the man to watch and then blows away the ashes from his fingers. He does this three times with three different *mantras* and the man thinks that he is cured. For the bite of a dog, a jackal or a boar, they believe that the pain is caused by some hair of the animal that sticks in the wound. In this case the *nagmotia* calls two uumarried boys or girls, who are given some millet flour and water, and, whilst the *nagmotia* proceeds with the *jharna*, they each roll the flour mixed with water into a ball. When the *jharna* is over the *nagmotia* takes the two balls between his fingers, opens them, and to the great astonishment and joy of the sick man, discovers to him what was the cause of his sufferings. This is a trick; and the hair is only something like the filaments we find when, in the rainy season, we break slowly mildewed damp bread.

The method of performing *jharna* for the mumps and toothache is much the same; it is also a trick. The *nagmotia* hides a small worm in ashes wrapped in a leaf of *sakhua*. Whilst he sings his *mantras*, he catches the head of the suffering man between his hands, keeping the leaf of *sakhua* with the worm applied to one of the ears, whilst he pours oil in the other. When he has finished his *mantras*, he opens the leaf of *sakhua* and shows the worm that was causing the man such excruciating pains.

These, however, are the only cases in which they consciously deceive the people. They always apply medicine first, and their tricks are performed solely to give the sick man confidence. Then there is their curious belief about palsy (*langhan*). The word *langhan* means to cross, to pass from one place to another; therefore *langhan* is the sickness the nature of which is, when dislodged from one body, to pass into another. This is again a good illustration of their way of thinking, as the whole practice rests entirely on a *jeu de mot*. There are only certain months in which the *langhan* can be cured; and it must be always at the new moon. When the *nagmotia* is called he collects first the things that *langhan* likes best: a collar of beads, a piece of bamboo, a broken

piece of gourd, a blade of grass and a pice. He makes a small bundle of these which he ties with a long piece of cotton thread. Another man is called to hold these in his hands, but lest the sickness should pass into his arm, his wrists are bound, not only with a rope but with *mantras*. Whilst the *jharna* is going on the man, holding the bundle both his hands, sits in front of the patient. Then after long *mantras* and incantations the *langhan* is at last induced to pass into the bundle and with the greatest precautions carried away from the house. They choose a small path which is not much frequented, place a peg on one side and the bundle on the other, and tie both together with a small string crossing the path. Anyone touching the string with his foot is bound to get the *langhan*.

Whitlow.—They think the disease is brought on by the bite of either a lizard, a fish called *gorai*, a praying mantis or a grasshopper. To cure this the *nagmotia* puts on the ground four clods of earth representing these four animals or insects. The patient is made to sit in front of these, at a distance of two feet, with his hand flat on the ground and his fingers stretched out. A stone is put on the hand and the *jharna* begins. After the necessary *mantras* and incantations the sick-finger is irresistibly drawn to one of the clods of the earth. They say that the disease, before going away, wants the sacrifice of the animal represented by that clod of earth. Very few *nagmotias* have magnetic power enough to bring this about.

Judu lagana—As has been said before, it is firmly believed that an *ojha* with his *mantras* can make a *bhut* sit, as they put it, wherever he likes, and a *bhut* sticks like a leech to the blood that has been offered to him in sacrifice. When, therefore, anyone bears a grudge against someone else, and wants to take his revenge, recourse is had to the *ojha* who is asked to make a *bhut* sit (*baithana*) either on one of those small things which the women stick on their forehead, and which look like wafers, or on a pice or on a *singhi*. The man to whose possession that pice passes is sure to be possessed by the *bhut* that has been made to sit on it.

The wafer is used when there is a crowd, as on a bazar day. The victim is spotted among the crowd, and, in passing, the wafer is attached to his clothes. This is a very dangerous trick, as the victim, on seeing the wafer sticking to his clothes, thinks that he is done for, and gets in such a fright that he at once becomes ill. The *singhi* is used to put in new houses either inside the mud walls or below the floor. This practice is so common that the people, when building a new house, watch it day and night until it is completed to prevent their enemies from sticking a *singhi* in the walls. This they dread above every thing, as they believe that a *singhi* in a house is a continual source of misfortunes. There is, of course, a remedy. When, after a series of misfortunes, for which they cannot account, the *ojha* declares that there is a *singhi* buried in the house,and the ceremony called *singhi nikalna* is performed. They call in the chief *ojhas* of the place who practise the *ghosna* for several days and then pretend to find the *singhi*. But this is only a fraud. The *ojhas* first bury the *singhi* and then pretend it is by their *mantras* they have found it. The *ojha* who finds it is given either a bullock or a cow.

The Uraons, like all other aborigines, are very superstitious. It would be tedious to record here all their superstitions, but a few examples may be given :

A woman never pronounces the name of her husband. This is good to know, as the time wasted in pressing for an answer will be saved. If she pronounces his name, the cotton crop is sure to fail.

Along the road you meet very often with heaps of stones. It is generally believed that these mark the place where a man has been caught by a tiger. It is not so. Those heaps are called *pathal punji.* When people go to the bazar, they add a stone to the heap in the hope they will then make good bargains. When they go for a visit, they do the same in the hope of getting plenty of rice-beer to drink.

Bihi khedna (to drive away the portent).—Generally once a year, sometimes twice, the whole country is startled by some wonderful news and some portent from heaven. It is difficult to know how these rumours originate, but they spread like wildfire. The two last ones were these. In Palamau a man had sown pumpkins in his garden. Among them was a very big one, and, when he opened it, there sallied forth two children. One of them stood with an inkstand in one hand and a pen in the other hand and said, "Aye! aye! fly from home for three days and do not look at your children." Having said this he fell down dead. In a few days the whole country was in a great state of commotion. As soon as this warning was imparted to them from heaven, people began running in all directions to avoid the sight of their children. Lots of people actually built small huts with branches and lived in the jungle to escape the wrath to come. In this the Hindus and Mahomedans joined.

One of these scares is almost annual in its recurrence. Suddenly the news spreads that a woman has given birth to a young pig. The rumour at least has the good effect of ridding the country of many of those animals, for, as soon as the news reaches the women, they raise a cry as if the village was on fire, and the whole female population immediately turn out armed with sticks, and, running to the nearest village, make a hecatomb of all the pigs they meet. No one dare make any objection. Of course, the women of the village so visited take the hint and, in their turn, go to the village nearest theirs and so on, so that the country is resonant with squeaking and screeching. The more incredible and the more unlikely the scare is, the more readily will it be believed. Any man endowed with a strong imagination, and having a command of the language, and of graphic and figurative speech, could bring those people to believe anything and do anything provided it be sufficiently stupid. Have we not had an example of it in Birsa Bhagwan? There was nothing remarkable in him, but a strong imagination, some cunning and a perfect command of the language, which enabled him to put things vividly and graphically so as to strike in an irresistible manner on the imagination of his countrymen. Is not this a plausible explanation of this phenomenon? Their intellect is naturally very weak, and nothing, absolutely nothing, is done by them to develop it. To add two and two they have to make use of small stones or count on their fingers. Their imagination, on the contrary, which is naturally vivid, is extraordinarily developed by the most wonderful stories, most wonderfully and vividly related by the *ojhas*, and all those that dabble in sorcery, so that the *folie du logis* gets complete mastery of the mass.

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MEMOIRS

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THE FAUNA OF A DESERT TRACT IN SOUTHERN INDIA.

PART I.—BATRACHIANS AND REPTILES. PART II.—INSECTS AND ARACHNIDA.

BY

N. ANNANDALE, D.Sc., C.M.Z.S.

Deputy Superintendent of the Indian Museum.

PART III.—A LIST OF A SMALL COLLECTION OF MAMMALS.

BY

R. C. WROUGHTON, F.E.S.

(WITH THREE PLATES)

Smithsonian Institution,
OCT 12 1906
National Museum.

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Notes on the Fauna of a Desert Tract in Southern India. Part I.—Batrachians and Reptiles, with remarks on the Reptiles of the Desert Region of the North-West Frontier.

(With two plates.)

By N. Annandale, D.Sc., C.M.Z.S., *Deputy Superintendent of the Indian Museum.*

[Read December 6th, 1905.]

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Introduction.

Although what may be called the characteristic fauna of Southern India (*i.e.*, that of the "Malabar tract")[1] has been investigated, as regards the vertebrates, in some detail, there are still considerable tracts of country even in this part of the peninsula which remain almost unknown to the zoologist. With the rich jungles of the hills, and the fertile uplands, in their vicinity, it is hardly surprising that Indian naturalists should have neglected the barren coastal plains, which are so unattractive in appearance and offer, comparatively speaking, so poor a harvest to the collector. Indeed, the fact has been almost ignored that these barren tracts are not entirely confined to the coast, but expand inland into what may be called, without exaggeration, miniature deserts. It is with one of these miniature deserts, in which I spent the month of August, 1905, that this communication deals.

The subdivision of Rámanád is at present part of the district of Madura. It has an area of over 2,000 square miles, and extends along the Indian shore of the southern extremity of Palk's Straits and the extreme northern corner of the Gulf of Manaar, including the island of Rámeswarem and extending inland for some little distance on the mainland. Obviously the formation of the country is very recent. The soil throughout the greater part of it is mere sea-sand, which is often impregnated with common salt, and sea shells are abundant at ten miles from the sea. The salt in the soil is said to be extending its range, soaking gradually in a widening circle through the sand, and is thus rendering the absolutely infertile area, which gradually disappears inland towards Madura proper, more extensive. The whole subdivision is absolutely flat. In some places open woods

[1] See Blanford in *Phil. Trans. Roy. Soc.* B. CXCIV, 1901, p. 346.

of the Bábul Thorn (*Acacia arabica* Willd.) cover a considerable area, and there are large groves of Cocoanut and Palmyra palms. The sandy wastes, where they are free of salt, bear at intervals scattered bushes of *Cassia auriculata* Linn. (the yellow flowers of which are most conspicuous), and in some places several of the poorer cereals are cultivated when the rains occur. For the greater part of the year, however, ordinary cultivation is impossible, the beds of the few rivers being dry or containing a very slender stream of water in their depths, and all except a few of the deeper tanks and wells being empty. Between October and January the rainfall is sometimes considerable; but at all seasons it is liable to fail. There is, close to the town of Rámanád, a basin about five miles square which after heavy rain becomes a lake, and then the rivers are in flood. Even during my visit in August, a few brief and extremely local thunder-storms occurred, and the air, owing to the proximity of the sea, was often very moist.

My visit to Rámanád was rendered successful largely by the kind offices of the Rev. A. D. Limbrick, of the S.P.G. Mission established in the capital of the subdivision. I am also indebted to the suggestions of Col. A. W. Alcock, F.R.S., at whose recommendations the Trustees of the Indian Museum permitted me to go to Southern India. The nomenclature in this paper is that of Boulenger's volume in the "Fauna of India," except when it is otherwise stated.

BATRACHIA.

Rana cyanophlyctis.

The specimens observed were all small, the largest male preserved measuring 41 mm. in length. This frog is very common in the little pools which are formed in the sand by every shower of rain, in wells, and at the edge of the larger tanks.

In the evening, after a shower of rain, the males became very noisy. Judging from a few tadpoles and young individuals which were seen in August, and from notes made on *R. limnocharis* and *Rhacophorus leucomystax* in Malaya and *Rana tigrina* in Calcutta, this croaking of the males means the renewal, to some extent, of sexual activity, but is not, unless climatic conditions are favourable, necessarily followed by breeding. After every shower, however, it appears that a few couples, suddenly aroused, in many cases from torpor, are sufficiently vigorous actually to produce young, which may either perish or survive according to circumstances; the true breeding season being apparently in the rains. It seems probable, moreover, that fall of comparatively cold water on their bodies affords sufficient stimulus, in the case of many frogs inhabiting warm countries, to induce a renewal both sudden (and it may be, as far as the offsprings are concerned, inconvenient) of the sexual instinct. Mr. E. J. Bles's observations on the breeding habits of *Xenopus lævis* in captivity [1] give very powerful support to this view.

Rana greenii.

R. greenii, *Boulenger in Spolia Zeylanica* ii., p. 74.

A single specimen was obtained at Rámanád which I believe to represent this form It was a female measuring 35 mm. in length. I have gone through the large series in

[1] *Proc. Cambridge Phil. Soc.* XI, p. 220.

the Indian Museum identified as *Rana limnocharis* by Mr. W. L. Sclater[1] and can find no specimen which agrees either with *R. greenii*, *R. brevipalmata*, or with *R. nilgirica*. We are badly off, however, as regards examples of most of the South Indian Batrachians.

Bufo melanostictus.

Common at Rámanád and on Ráméswarem, as it is throughout the plains of India, Burma, Ceylon, Siam and Malaya. Immediately after dark numerous individuals may be found hopping slowly along even in the driest localities. The eggs seem to be laid, as a rule, in small pools of rain-water.

In Calcutta, I have on several occasions observed individuals of this Toad seated under lamps attached to the wall of a house, and feeding on the insects which burnt their wings and fell to the ground (cf. *postea*, pp. 186, 209).

REPTILIA.

Testudo elegans.

Not uncommon on the sand, both in Ráméswarem and on the mainland. Its food consists largely of the thickened, almost leafless stems of certain desert plants. It is mild in behaviour and soon becomes very tame.

The species reaches at least 18 inches in length of carapace, judging from specimens in the Museum; but all those seen in Rámanád were small.

Nicoria trijuga var. thermalis.

This form does not appear to have been recorded previously from the mainland of India, but is by far the commonest Tortoise throughout Rámanád. It appears to be entirely terrestrial in its habits and is found on the sand at considerable distances from water. In captivity it shows no eagerness for vegetable food, but the Tamils say that it feeds on the stems which form a great part of the diet of *Testudo elegans*. Only young specimens were obtained.

Hemidactylus frenatus.

A very common Gecko in houses throughout the whole of Southern India. We have specimens from the Calcutta bazaars in the Museum; but they may have been introduced, as the species is rare in Lower, though abundant in Eastern Bengal.

Hemidactylus brookii.

Equally common with the preceding species in houses in Rámanád and throughout the greater part of India. It occurs in human habitations in Calcutta[2] but is not here so abundant as *H. flaviviridis*. A pair, however, have taken up their abode for some months

[1] See *List of the Batrachia in the Indian Museum*, 1892.

[2] I have lately found it (March 1905) abundant under stones on dry soil in jungle on hills near Chakardharpur, Chota Nagpur. (March 8th, 1906.—N. A.)

in a basket of papers, which are very seldom disturbed, on my writing-table in Calcutta. I think they are male and female, but cannot be quite sure on this point. One of them lost its tail by some accident, and the new tail took about a month to grow to its former size.

A habit of this Gecko, and also of *H. flaviviridis*, *H. frenatus* and *Gehyra mutilata*, appears to be little known among herpetologists (although well known to all observant residents in the East) and therefore worthy of record. I mean the habit of frequenting the neighbourhood of artificial light at night and feeding on the insects attracted thereby. I have frequently noticed, both in Calcutta, in Colombo, and in Singapore, that almost every street lamp contains at least one Gecko after the lamp-lighter has gone his round. In Calcutta, if a lamp is fastened to the wall of a house, either inside or out, an individual, or frequently a pair, of *H. flaviviridis* takes up its residence in the immediate vicinity, frequently behind the lamp, and issues out at night to catch prey with the aid of the light. The pair of *H. brookii*, to which I have alluded above, were probably attracted to the basket in which they live, by the fact that a lighted lamp was placed beside it every night, and certainly they benefit by feeding on the insects which burn their wings. Elsewhere I have noted an instance of an insect (the Mantis, *Hierodula modesta*)[1] acting in a similar manner, while attention is drawn above to an identical procedure on the part of a Toad.

The frequency with which the different species of house Geckos are seen in pairs leads me to think that they are monogamous. If I am right, the association is not dissolved at the end of the breeding season in all cases; for even at the beginning of December, when the Lizards are in a semi-torpid condition and only issue from their retreats occasionally, the two individuals, in the case of *H. brookii*, are just as frequently noted together as they were in August. Solitary specimens of *H. flavivirdis*, however, are as common as those which have, apparently, taken a mate.

Hemidactylus leschenaultii.

This Gecko is abundant in all parts of Rámanád, but not in houses. Its favourite situation is the trunks of Tamarinds and other trees which have a greyish bark. Here its marbled grey back and sides render it most inconspicuous. In Calcutta I have seen it on the walls of out-houses, but never inside a human dwelling. It has been described, however, as a house Lizard, and very possibly is one in some parts of India; for *Gecko verticillatus*, a common house Lizard in many parts of Burma and Siam, does not habitually enter houses in the Siamese Malay States. The latter species is not, however, so admirably concealed by its coloration on the trunks of the Areca and Cocoanut palms it frequents, as *H. leschenaultii* is on stone walls and the bark of certain trees.

Hemidactylus triedrus.

Three specimens were obtained; one at Pamban, one at Mandapam, and one at Rámanád. Of the two latter, one was caught in a house and the other in a tent set up in a garden.

[1] *Proc. Zool. Soc.* 1900, p. 852.

In life this lizard has a beautiful but subdued coloration which rapidly disappears after death. The following description was taken from a living specimen: Ventral surface pinkish white; dorsal surface buff with a greenish tinge, with scattered white tubercles; three pale olive-green cross bars, each edged with white; supraocular region leaf-green.

Teratolepis scabriceps, sp. nov.

Diagnosis.

Habit rather stout, limbs short; tail cylindrical, swollen at the base, tapering distally; head large, flat; forehead convex; snout slightly longer than orbit, rounded, blunt. Head, dorsal surface of neck and shoulders covered with small, highly convex, rounded scales, which are smallest on the vertex and largest just above the fore-limbs. Scales on dorsal surface of the trunk not much larger than those on the belly, leaf-shaped, strongly imbricate, keeled or almost smooth. Two pairs of enlarged chin-shields, followed posteriorly by a number of irregular granules, the first pair meeting behind the mental; 7 to 8 upper, 6 to 8 lower labials; nostril between the rostral and several small scales. *Colour* pale grey, with a coarse and irregular reticulation of black and white on the back.

Dimensions ♀	Total length	75	mm.
	Head	14	,,
	Body	31	,,
	Tail	30	,,
	Fore-limb	9	,,
	Hind Limb	15	,,

Two specimens from Rámanád; one an adult female containing two large eggs, the other half-grown.

The pupil is vertical, as it probably is in *T. fasciata* also. *T. scabriceps* is the second species of the genus to be described. The type form is only known from a few specimens, all of which appear to be in a bad state of preservation, from Central India and Sind. The new species differs from it (1) in its less graceful habit and shorter limbs; (2) in the possession of conical rounded scales on the head and fore-quarters; and (3) in having two pairs of distinctly enlarged chin-shields. Unfortunately the type of *T. fasciata*, the only other specimen of the genus to which I have access, is almost wholly disintegrated; but sufficient remains of the skin on the head and of the limbs to show that these differences are real ones.

Teratolepis and *Calodactylus* (the latter from North Arcot) are the only genera of their family peculiar to the Indian Fauna, both being highly specialized genera.

Sitana ponticeriana.

Very common throughout Rámanád, both on the seashore immediately above high tide-mark and inland.

I can bear out the statements of Jerdon and Blanford that this is, under natural

conditions, a ground lizard ; but in captivity it is fond of resting on twigs stuck upright in the ground. In the middle of August the breeding season[1] was evidently about to commence. The gular appendage of the male was, in most cases, just asuming its brilliant coloration. In some specimens the anterior margin was bluish-grey, the remainder being dirty white ; in others this margin was of a brilliant " Oxford " blue, the breadth of the streak thus formed varying with the degree of development. Within the blue streak scarlet spots were more or less conspicuous, first appearing as of a dirty grey colour. An additional ornamentation was very noticeable in fully developed living specimens, *viz.*, a pearly iridiscence on the scales of the throat at the base of the appendage. These brilliant ornaments were quite absent in the females. The appendage is not a pouch and has no connection with the air-passages or the lumen of the gullet. It consists of a deep fold of skin, the cavity of which is filled with connective and muscular tissue, the latter taking the form of a stout band attached above to the base of the tongue and below to the lower extremity of the anterior margin of the appendage. When this muscle is tautened the anterior margin is drawn down into a vertical position, and the appendage, which is otherwise pressed tightly against the throat, is unfolded like a fan. The male, if undisturbed, may be watched standing with the fore-quarters well raised from the ground and the hind-quarters pressed back on the base of the tail (the distal extremity of which is raised in the air), alternately unfolding and folding the appendage. The female or females, to attract which the performance takes place, remain concealed beneath a bush or stone in the neighbourhood. If a male is roughly handled the appendage is likewise unfolded in the excitement of the struggle.

The arched position of the tail, with the base resting on the ground and the tip raised in the air, is very characteristic of this Lizard. When running it occasionally raises its fore-limbs from the ground, and the weight of the body is always supported very largely on the base of the tail. Several other Agamids have been observed to adopt a bipedal mode of locomotion when moving rapidly. The most notable instance is that of the Australian Frill Lizard.[2] Green has noted the same habit as regards *Otocryptis bivittata*[3] in Ceylon, and I have done so as regards *Calotes versicolor*[4] in Malaya. Mr. L. L. Fermor, of the Geological Survey of India, tells me that he has seen in Kumaon an *Agama* (probably *A. tuberculata*) momentarily assume an almost upright attitude, with the fore-limbs well raised from the ground, when running away.

1 Living females brought to Calcutta from Rámanád became distended with eggs in September, in which month one died egg-bound. The eggs were then large, but devoid of an outer covering and amorphous in outline The distention of the body continued till December. Another specimen then died and was dissected. The oviduct contained eggs with a very tough leathery shell devoid of calcareous matter. They were rounded at either end and measured 10 mm. by 5 mm. In each the embryo, which had already passed through the earlier stages of development, was visible to the naked eye. Other similar eggs were laid about the same time and were buried by the parent in the sand, but soon died, if they were alive when laid, and shrivelled up. Rai R. B. Sanyal, Bahadur, Superintendent of the Calcutta Zoological Gardens, has called my attention to the long period for which house Geckos (? *Hemidactylus flaviviridis*) go with eggs, and is inclined to regard the long retention of the eggs by *S. ponticeriana* in captivity as possibly not abnormal. I lately saw large numbers of this lizard in open jungle in Chota Nagpur. Living among dead leaves or a dry, greyish soil, they were much darker and duller during life than specimens from the sandy wastes of S. India. They were also all very small. (March 8th, 1906.—N.A.)

2 Saville Kent in *Nature*, LXVI, p. 630.

3 *Ibid.*, p. 492.

4 *Ib id.*, p. 577. Colonel Alcock permits me to say that he has seen *Calotes versicolor* running across his lawn in Calcutta with the fore-limbs raised from the ground.

Calotes gigas.

C. versicolor (partim), *Annandale in Journ. As. Soc. Bengal*, 1905, p. 87.

In spite of what I said in the paper referred to regarding Blyth's *Calotes gigas*, I think that it will be well to regard this form as having conventional specific rank. It is evidently no more than a race (probably local) of *C. versicolor;* but as it does not appear to have been customary to recognize subspecies in the genus, it will be convenient to call it by Blyth's name pure and simple. When I published the note alluded to I had examined a large series of specimens, none of which were in good condition ; but the examination of a considerable number of living and freshly-killed examples, both of *C. versicolor* and of *C. gigas*, shows that sufficient attention was not paid to certain characters which are obscure in badly-preserved material and can only be detected in such material when carefully sought for. The only objection to regarding the two forms as distinct species is the difficulty of diagnosing the females, for as regards the males, at any rate when they are adult or at least half grown, there is no such difficulty.

In both sexes the number of scales round the body, their arrangement and general character are practically identical in the two forms ; but in almost all cases it is quite easy to separate one from from the other on inspection. In *C. gigas* (both sexes) the scales of the body and limbs are distinctly larger, the body being relatively deeper than in *C. versicolor ;* those which form the crest differ in outline, their posterior edge in *C. gigas* being more or less sinuous and their anterior edge convex forwards, while in *C. versicolor* both edges are nearly straight ; in the former species, too, they are considerably longer than in the latter, while the scales adjacent to them on either side have a more pronounced character, their dorsal extremity being prolonged into a spine continuous with their strong keel. The extent of the crest backwards is also greater in *C. gigas* (both sexes) than in *C. versicolor*, and the cheeks are more swollen. The males of *C. gigas* have one very characteristic feature, which is apparent even in half-grown individuals :—the base of the tail is swollen and its dorsal and lateral surfaces are covered with scales the edges of which are greatly thickened and plicated, the keel also being thickened but barely extending to the edge of the scale posteriorly ; while the last three spines of the crest are much thickened laterally. The coloration of the two forms is also slightly different, and *C. gigas* perhaps does not possess the same powers of colour-change as *C. versicolor*. The males of the former are (both in spirit and during life) of a sandy colour, which may deepen into yellow on the swelling at the base of the tail. The base of many of the scales on the back and sides is densely irrorated with chestnut atoms, and there may be dark transverse bars and reticulations on the sides. The greater part of the thigh is frequently black or very dark-brown, and the whole of the hind-quarters is generally darker than the fore-quarters. There are usually two conspicuous black spots on the top of the head just behind the occipital scale, which may be white, and more or less marked dark streaks radiate from the eyes. The female is far more boldly marked. The ground colour of the dorsal surface of the body and limbs is a pale chestnut, on which there is a very bold reticulation of sandy colour. The streaks radiating from the eye are more conspicuous than in the other sex ; the two dark spots

behind the occipital scale are edged with white, and there are two or three broad, dark, pale-edged bars across the top of the head in front of this scale, the posterior bar being the most conspicuous. A black spot in front of the shoulder is constant in both sexes.

Boulenger's description of the coloration of *C. versicolor* in the "Fauna of India" is sufficiently exact as regards specimens preserved in spirit. Living specimens, especially females, have sometimes a greenish tinge, while young individuals of both sexes are easily recognized on account of a pale line which runs along each side and is often joined to its pair by dark cross-bars. The markings on the head in females may be similar to, but less conspicuous than, those on that of *C. gigas*. A satisfactory detailed account of the colour of the living *C. versicolor* is, however, rendered impossible by the powers of colour-change the Lizard possesses. As in the true Chameleon, with which this Lizard is frequently confused, these powers are regulated chiefly by psychological stimuli.

As regards actual dimensions, *C. versicolor* does not reach those of *C. gigas*. The following measurements show the bulk attained by well-developed adults of both sexes; they are taken from species which do not seem to be in any way abnormal as regards size. Possibly, however, the females grow larger than they would indicate:—

Dimensions of Calotes gigas.	♂	♀
Total Length	... 460 mm.	...
Head	... 35 ,,	27 mm.
Body	... 95 ,,	74 ,,
Tail	... 330 ,,	injured
Hind Limb	... 95 ,,	80 ,,
Fore-limb	... 60 ,,	50 ,,
Breadth of Head	... 26 ,,	18 ,,

Numerous examples of *C. gigas* were obtained both on Rámeswarem Island and on the mainland of Rámanád, and no other form was seen. It is not, however, confined to Southern India. Dr. A. Willey, Director of the Colombo Museum, has kindly sent me specimens from Colombo, where it would appear to be the common form, as it certainly is in the suburbs of Madras. We have specimens in the Museum, which a comparison with fresh ones has enabled me to detect, from Central India, S. Bombay, the North-West Provinces, and Sind; but the few we have from Baluchistan must be referred to *C. versicolor*. Whether the two forms occur together in any one locality I have not been able to ascertain with certainty.

C. gigas, as far as my observations go, is more arboreal, strictly speaking, in its habits than *C. versicolor*, which lives chiefly in bushes and on the ground. All the specimens I saw in Rámanád were on tree-trunks or running from tree to tree. The males crawl slowly up the trunks, nodding their heads to the females, which keep out of sight and are difficult to detect. For this reason, by far the greater number of the specimens brought me were males.

Muhammadans in Rámanád regard *Calotes* with great dislike and kill it whenever they get an opportunity. They say that some Muhammadans were once hiding in a well

and that one of these Lizards betrayed them to their enemies by standing above and nodding its head in their direction.

Mabuia bibronii.

This Skink is generally reckoned scarce in collections, but it is extremely abundant, together with *Sitana ponticeriana*, on the sands of Rámanád, especially on the shore at Pamben. It progresses very rapidly, carrying its body low and making as much use in progression of its tail as of its legs. It is one of the few Skinks with which I am acquainted in which the young are not more conspicuously marked than the adults. Small individuals, which may have been recently born or hatched, were common in August and closely resembled the adults. The adult males had a band of reddish brown running along the side which was absent from the females. Males of *Lygosoma sikkimense* obtained from Darjeeling in April had a very similar distinction.

In several examples a third lobule, smaller than either of the two normally present, occurred at the anterior edge of the ear-opening on one side (never on both sides) of the head. Very possibly the function of the unusually long lobules in this species is to prevent grains of sand from coming in contact with the tympanic membrane, which is protected or entirely covered in other sand-loving skinks, notably in those of the genus *Scincus* and *Ophiomorus*.

Lygosoma punctatum.

A single specimen was brought to me in the town of Rámanád.

Chamæleon calcaratus.

Common in Rámanád, especially on Tamarind trees.

Under natural conditions the Indian Chameleon does not possess the same powers of colour-change as *Ch. vulgaris*. When undisturbed it is of a bright green colour, with a variable number of large pale-yellow spots and blotches on the sides, the midventral line from the chin to the vent, the soles of the feet, the gape and a line drawn backwards from it along the side of the head, and a horizontal bar behind the axilla being of the latter shade, as well as a suffusion on the sides of the throat immediately behind the head. When the animal is interfered with, the pale spots on the sides disappear and the whole head and body become blotched and marbled with dark green, the body being at the same time distended. In this condition the Chameleon attempts vigorously to bite, and even sits up on its hind legs, clutching at its adversary with its hands and hissing viciously. In captivity it becomes much paler in colour and loses its power of changing to a great extent. Narcotized specimens become almost black, as captive individuals frequently do during cold weather. The pale midventral line, however, never disappears. Young individuals, of four inches long, resemble adults as regards colour.

I am inclined to think that this species moves less deliberately than the North African form, and makes less use of its tail in progression. Although the tail is occasionally twined round a branch, it is just as frequently held coiled in a spiral beside the branch. A large male, obtained at Kilakarai, had lost the greater part of its tail by some accident.

The wound had healed, leaving a distorted stump; but the animal seemed in no way inconvenienced. There were no signs of new growth in the stump.

The natives of different parts of India have many superstitions regarding the Chameleon. The Hindus and Muhammedans of Rámanád regard it as being possessed by an evil spirit, and will not touch it lest the spirit should enter their own bodies. Like most Anglo-Indians they confuse it to some extent with Lizards of the genus *Calotes*, but they regard it as specifically distinct from the Lizards.

Typhlops braminus var. arenicola, var. nov.

Differs from the typical variety in being slightly stouter, in having a shorter spine at the tip of the tail, and most notably in colour. The ventral surface is white (in spirit) and each scale on the dorsal surface is faintly tinged with buff, those on the head being faintly vermiculated with the same shade. In life the whole animal is of a pale flesh-colour, due to the blood seen through the almost pigmentless integument.

I think I am right in regarding this form as a variety of the common *T. braminus*[1] although it has more the appearance of a specimen of *T. diardi* which has been bleached in spirit by exposure to strong light. It has been, however, a matter of extreme difficulty to detect the limits of the scales on the heads of this and the two other almost colourless forms described, even when various staining agents were used. The present form certainly has, as have also the other two, a completely divided nasal, and the scaling of its head closely resembles that of *T. braminus*. Possibly it should be considered a distinct species; but I do not feel confident on this point. The three specimens obtained have each 20 scales round the body. They are distinguished from *T. accedens* by the greater relative girth.

This form apparently lives in the sandy soil prevalent at Rámanád, but I was not so fortunate as to find an example myself, the examples examined having been procured for me by native boys.

Very little seems to be known regarding the habits of even the common species of *Typhlops*. I have taken specimens of *T. braminus* in leaf mould, in the rotten wood of fallen trees in the jungle, under stones on dry soil in an open wood, and crawling on the floor of a house in Calcutta. One of the attendants at the Indian Museum lately brought me a piece of sugarcane which he had peeled with the intention of chewing it. It must have grown, judging from its girth, at a considerable height above the ground, and it was traversed vertically by the burrow of some caterpillar. The caterpillar had disappeared, but the burrow was occupied by a specimen of the common *Typhlops*. I kept this specimen alive for some days in an insect cage in which some caterpillars had lately pupated, and was surprised to see it swallowing their excreta. It used the spine at the tip of its tail in maintaining a grip of any object round which it coils itself very much in the same way as *T. acutus* uses its beak.[2]

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[1] During the last year specimens of the following species have been brought to the Museum from Calcutta and its neighbourhood:—*T. braminus*, *T. diardi*, *T. porrectus*, and *T. acutus*; the last most frequently. The pigmentation of normal specimens of *T. braminus* from the same locality is somewhat variable, and in var. *arenicola*, judging from an individual taken during the rains at Rámanád by the Rev. A. D. Limbrick, the colour of the dorsal surface may be a more deeply suffused with buff than it is in the types of the variety. (March 8th, 1906.—N. A.)

[2] See *Journ. As. Soc. Bengal*, 1905, p. 209.

Typhlops limbrickii, sp. nov.

Diagnosis—

Habit slender, short, somewhat flattened; head broad, rather large; eyes large but inconspicuous; snout rounded, projecting moderately; tail slightly longer than broad, ending in a point; the diameter of the body contained about 29 times in the length; 18 scales round the body. Rostral about $\frac{2}{3}$ the width of the head, barely reaching the centre of the eyes behind; nostril lateral but almost inferior, between two nasals, the first of which is in contact with the first labial and does not reach the upper surface of the head, the cleft between the two starting from the suture between the first and second labial; the posterior nasal widely separated from its fellow above; a præocular almost as large as the ocular; no subocular; the præocular in contact with the third labial below; (?) five upper labials; the upper head scales scarcely larger than those on the dorsal surface of the body. Head and upper surface of body feebly tinged with buff; tip of tail and the whole ventral surface dirty white (pale flesh-colour in life). Total length of type specimen, 72 mm.

A single specimen from Rámanád. I have much pleasure in associating the species with the name of the Rev. A. D. Limbrick, of Rámanád.

Typhlops psammophilus, sp. nov.

Diagnosis—

Habit slender, elongated, cylindrical; head very small; eyes small but densely pigmented; snout rounded, obtuse, projecting; tail twice as long as broad, ending in a spine; the diameter of the body contained about 78 times in the total length; 20 to 22 scales round the body. Rostral less than a third the width of the head, not reaching the level of the eyes behind; nostril lateral, between two nasals, the cleft proceeding from the first labial and reaching the upper surface of the head, the posterior nasal separated from its fellow above; 4 upper labials; a præocular larger than the ocular, in contact with the anterior nasal; no subocular. Head and tip of tail white; scales on body, above and below, pale grey minutely edged with black, giving the animal a delicately reticulated appearance. Total length, 195 mm.

Three specimens from Rámanád.

Eryx conicus.

Gongylophis conicus, *Boulenger*, *Fauna Ind.*, *Rept.*, p. 247, fig. 75.

An adult female and three young ones, said to have been found with it, were brought me at Rámanád. The young were far more brilliantly coloured than the adult but their markings had the same outlines.

Eryx johnii.

This species is evidently more common than the preceding, both on Rámés-warem Island and the mainland. Numerous specimens were brought me at every halting place. Probably both it and *E. conicus* feed on the small rodents (*Mus* and *Gerbillus*) which are abundant in the sand.

The young of *E. johnii* are of a briliant brick-red colour in life, with black cross bars on the back. The adults differ considerably in this respect, especially as regards the ventral surface, which may be almost white or densely crowded with dark brown atoms. The colour of the dorsal surface only varies in intensity.

Large individuals seem to be liable to a disease of the tail, which is very frequently distorted even under natural conditions; while in captivity it sometimes becomes covered as if with mould.

Lycodon striatus.

A specimen was brought me at Pamben. Its coloration in life was practically identical with that of the example from Ceylon recently described by Green [1]; but it is said that in specimens from Malakand the pale markings are bright yellow during life, although they fade rapidly in spirit. A model in the Indian Museum, prepared from a specimen and description furnished by Major Maynard, I.M.S., is coloured in this way.

The snake appears to be rare wherever it is found. Thurston [2] records the common *Lycodon aulicus* from Rámeswarem, but I did not see a specimen.

Zamenis mucosus.

A large specimen was brought me at Rámanád, where I am told it is not uncommon.

The coloration of this individual differed somewhat from that of specimens from the damper parts of India, the dorsal and lateral scales all over the body and tail being golden brown at the base, and the head scales being suffused with the same shade. The whole animal had, therefore, a sandy tinge, which did not, however, appear to be sufficiently developed to be actually protective in function.

Dendrophis pictus.

Common on Rámeswarem Island and on the mainland. It seems to be more strictly arboreal in Rámanád than it is in the Malay Peninsula, where it is common on bushes a few feet above the ground.

I have lately dissected a considerable number of specimens both from Southern India and from the Andamans, and I find that in two of these specimens (one from each locality) there are only twenty teeth in the maxillary. This observation breaks down the separation between *Dendrophis* and *Dendrelaphis*, but as the species of both genera are easy to distinguish from one another, the matter is not one of importance.

An examination of living and fresh specimens from the Andamans, sent to Calcutta by Major A. R. Anderson, I.M.S., shows that at any rate the majority of examples from these islands belong to a very distinct colour variety, which was accurately described by the late Dr. J. Anderson [3] under the varietal name *andamanensis*. Without examination of the scales it would be hard to believe that Major Anderson's specimens from Port Blair and mine from Rámanád belong to the same species. The following is Dr. Anderson's description of the coloration of *D. pictus* var. *andamanensis* :—

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[1] *Spolia Zeylanica*, ii, p. 205. [2] *Madras Govt. Mus. Bull.* III, 1895. [3] *Proc. Zool. Soc.* 1871, p. 184.

Grass-green above, each scale with a broad, black margin, and the ventrals with a black margin externally as far as the keel. The black margins of the lateral scales so broad that when the body is at rest they produce an appearance as if a black line ran along the side of the body. A black band the breadth of the loreal through the eye, over the inferior postorbital and upper margins of the last upper labials, to the side of the neck, where it breaks up at intervels of two rows of scales into round, black spots, etc.

The Rámanád specimens differ slightly, chiefly as regards their less vivid colours, from examples from Bengal or the Malay Peninsula, but more nearly resemble the former than the latter. It does not seem worth while to give them a varietal name, but the following description is based upon them :—

Dorsal surface dark bronze ; a pale spot on the centre of the upper surface of the head, a broad mid-dorsal line of pale buff extending from the neck to the tail, on which it gradually becomes indistinct, and a white, lateral line edged above with black ; labials and sides of the neck pale yellowish, with vertical black streaks, the sides of the neck tinged with pale blue ; ventral surface dirty white, more or less distinctly tinged with yellow on the throat, becoming darker posteriorly until, about the centre of the body, it is slate-grey. There is no tinge of green in the coloration. In specimens from Bengal, the pale mid-dorsal line may be obscure or absent and the bronze of the back and sides is not quite so deep or so brown.

Tropidonotus piscator.

Several specimens were brought me at Rámanád which had been taken in holes in the sides of wells. Their coloration is of an indefinite character, the dorsal surface being pale olive-green with numerous small, black spots and streaks arranged irregularly, and the belly uniformly yellowish. The common variety in Calcutta is var. *A.* of Boulenger's "Catalogue," which also occurs abundantly in the Andamans. As regards coloration and appearance generally, the Rámanád's specimens resemble *T. plumbicolor*, but the scaling and proportions of tail and body are those of *T. piscator*.

In Calcutta this is the only snake at all commonly seen in the open, though *Lycodon aulicus* and *Typhlops acutus* are not infrequently found in houses, the former being sometimes mistaken for the Krait. In the evening, numerous specimens of *T. piscator* may be seen swimming on the surface of many tanks, and their evolutions beneath the surface may be watched during the day in any suitable place. Their food consists wholly or chiefly of fish, and they do not as rule molest the large Tank Frogs (*Rana tigrina*) which may sometimes be seen sitting side by side with them on stones in the water. *T. stolatus* is just as common on the banks of the tanks, but it is not so thoroughly at home in the water and usually remains concealed among the herbage on dry land.

Dryophis mycterizans.

Common throughout Rámanád.

The specimens from Rámanád are normal in every respect, but I take this opportunity to describe what appears to be a new variety from Santragachi on the Bengal-Nagpur Railway, the type having been presented to the Indian Museum by Mr. G. Cummusky.

var. nov. ANOMALUS.

Agrees in coloration, proportions and scaling of the tail and body with the typical variety, from which it only differs in the structure of the integument of the nasal appendage. This is covered above by small scales somewhat larger than those in the same position in *D. pulverulentus*.

I was inclined to regard the specimen as a mere monstrosity until the Zoological Gardens [1] at Alipur received an identical example from Lower Bengal a few weeks ago. The variety can be distinguished readily from *D. pulverulentus* by its characteristic coloration and by the fact that the rostral appendage is shorter than the eye.

NAIA TRIPUDIANS.

Common on Rámeswarem Island and on the mainland. The specimens seen belonged to the *forma typica* of Boulenger's "Catalogue." This is the common form in Madras, var. *C.* (*fasciatus*) being more abundant in Bengal. In the Malay Peninsula, the latter variety is the least scarce in most parts of the Siamese States, while in Selangor and at Singapore var. *D.* (*sputatrix*) is the prevalent if not the only form. The yellowish variety without or with very faint markings which is apparently not uncommon in Rhaman [2] and which appears to be represented by a specimen taken by Flower [3] in Perak, seems to be near var. *B.* (*cæca*) but does not quite agree with any described in the "Catalogue." Should it seem desirable to give it a name, it may be known as var. *aurea*.[4]

ECHIS CARINATUS.

Three very small specimens were brought me at Mandapam. They agree in every respect with those from Northern India. The species appears to be generally scarce in Rámanád, but is said by native boys to be abundant in certain restricted localities.

REPTILES COLLECTED BY THE SEISTAN ARBITRATION COMMISSION.

In order to compare the herpetology of Rámanád with that of an inland desert tract at the other extremity of India, I give below a list of the Reptiles obtained by the recent Seistan Arbitration Commission under Sir A. H. McMahon. Unfortunately a large number of the labels attached to the specimens have become illegible in spirit, but all those which I have been able to read, indicate localities on one side or the other of, but always in close proximity to, the Perso-Baluch frontier. A single specimen of *Ophiomorus tridactylus* appears to be actually from Persian Seistan, but even this is not quite clear. In any case it is improbable that there is any great difference between the herpetological fauna of Persian Seistan and that of the north-western part of Baluchistan, which

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1 Rai R. B. Sainyal, Bahadur, tells me that in his long experience at the Gardens he has frequently noted this variety among specimens of *D. mycterizans* from the Midnapur district of Bengal. (March 8th, 1906.—N. A.)

2 Laidlaw, in *Proc. Zool. Soc.*, 1901 (2), p. 580; Annandale, *Fasc. Malay. Zool.* 1, p. 168 (note).

3 Flower, in *Proc. Zool. Soc.*, 1899, p. 691.

4 Since this was written an elaborate analysis of the distribution of different varieties of the Cobra in India has been published by Col. Bannerman (*Journ. Bombay Nat. Hist. Soc. XVI*, pp. 638–643).

belongs zoologically, as is shown by the occurrence of such forms as *Eryx jaculus*, to Persia rather than to India. Alcock and Finn[1] have published an account of the Reptiles obtained in 1896 by the Afghan-Baluch Boundary Commission which probably gives a truer idea of the same fauna, and I therefore give a list from their paper of the species they enumerate and describe.

1. Reptiles Collected by the Seistan Commission (1903-5).

Lizards—

Teratoscincus scincus §	(one specimen).
Agamura persica §	(two specimens).
Agama isolepis §	(three specimens).
Phrynocephalus maculatus §	(one specimen).
Varanus griseus §	(five specimens).
Eremias velox §	(seven specimens).
Ophiomorus tridactylus §	(five specimens).

Snakes—

Eryx jaculus ‖	(five specimens).
Lycodon striatus * ‖	(one specimen).
Zamenis diadema §	(two specimens).
,, karelinii §	(ten specimens).
Taphrometopum lineolatum §	(eight specimens).
Dipsadomorphus trigonatus *var.*, melanocephalus	(seven specimens).
Echis carinatus § *	(seventeen specimens).

Also several specimens in a bad state of preservation.

2. Reptiles Collected by the Afghan-Baluch Expedition (1896).

Lizards—

Teratoscincus scincus. §
Ceramodactylus affinis.
Stenodactylus orientalis.
Gymnodactylus sp. (*prox.* kachensis).
Agamura cruralis.
,, persica. §
Agama isolepis. §
,, nupta.
Phrynocephalus olivieri.
,, ornatus.

[1] *Journ. As. Soc. Bengal*, (2), 1896, pp. 530-566.

Phrynocephalus maculatus. §
,, euptilopus.
,, luteoguttatus.
Uromastix asmussii.
Varanus griseus. §
Acanthodactylus cantoris.
Eremias guttulata.
,, velox. §
Scaptira scripta.
,, aporosceles.
Ablepharus brandtii.
Ophiomorus tridactylus. §

Snakes—

Glauconia blanfordii.
Lytorhynchus ridgewayi.
,, maynardi.
Zamenis diadema. §
,, karelinii. §
,, rhodorachis.
Taphrometopum lineolatum. §
Eristocophis macmahonii.
Echis carinatus. * §

The following is a list of the Reptiles recorded from Rámanád. Those whose names are enclosed in square brackets are noted by Thurston (*op. cit.*), the remainder were collected or examined by myself, specimens of all but *Naia tripudians* having been preserved :—

3. Reptiles Recorded from Rámanád.

Tortoises—

Testudo elegans.
Nicoria trijuga *var.* thermalis.

Lizards—

Hemidactylus frenatus.
,, brookii.
Hemidactylus leschenaultii.
,, triedrus.
Teratolepis scabriceps.
Sitana ponticeriana.
Calotes gigas.
Mabuia bibronii.
Lygosoma punctatum.

Chameleon—

Chamæleon calcaratus.

Snakes—

Typhlops braminus *var.* arenicola.
,, limbrickii.
,, psammophilus.
Eryx johnii.
,, conicus.
[Lycodon aulicus.]
,, striatus.*
Zamenis mucosus.
Dendrophis pictus.
Tropidonotus piscator.
[,, stolatus.]
Dryophis myterizans.
Naia tripudians.
Echis carinatus.*

The names of species which occur in either of lists 1 or 2 and also in list 3 are marked with a * ; of those which occur in both 1 and 2 with a § ; and of those which are confined to 2, with a ‖.

Of the 14 species and 13 genera included in the first list 3 species and 2 genera are not included in the second, while of the 31 species and 24 genera in the second, 20 species and 10 genera are not included in the first. We may, however, regard these two lists as complementary to one another. Of the 26 species and 18 genera in the third list, 2 species and 4 genera are common to it and to one or both of the first two.

NOTES ON DISTRIBUTION.

On the whole, the inclusion of such forms as *Echis carinatus*, *Eryx conicus*, and *Eryx johnii* in the fauna of Rámanád suggests that this fauna is a desert fauna of wide distribution in India. The most superficial examination, however, of the lists given on the preceding pages will show that there is a very great difference between the fauna of the deserts of the extreme north-western (political) border of India and that of the desert tracts in the south-eastern corner of the Peninsular Area. As Blanford[1] has pointed out, a great part of Baluchistan belongs practically to the Palæarctic Region, and this observation is well borne out by the collections recently made on the northern border of that country. We may note in passing the comparatively large number of Lacertidæ in the two first lists given above, or at any rate in the second list, which is much more nearly complete than the first. There are no members of this family in my Rámanád collection, and it is doubtful whether any exist in the area it represents. In the Afghan-Baluch list, on the other hand, no less than five species, representing three genera, are recorded. A similar difference may be noted as regards the genera of the Agamids included in the

[1] *Phil. Trans. Roy. Soc.* B. CXCIV, 1901, p. 337, etc.

two faunas. Those from the North-West Frontier belong to the genera *Agama*, *Phrynocephalus* and *Uromastix*, all of which are typically Palæarctic and Ethopian; while those from Rámanád represent *Calotes* and *Sitana*, the first of which is confined to the Oriental Region, while the second is peculiar to the Indian Peninsula, in which it is represented by a single species. Further, the genus *Lytorhynchus* is essentially a northern genus, while the species of *Eryx* which occurs on the North-West Frontier is not that of Peninsular India but ranges from the north of Baluchistan to South-Eastern Europe and North Africa.

Of the species which occur on the Frontier and also in Rámanád, *Echis carinatus* is found in "desert or sandy districts of Africa north of the equator; Southern Asia, from Transcaspia to India," but apparently not east of Bengal; while *Lycodon striatus* has only been recorded from Transcaspia, India and Ceylon. As the latter snake is more abundant in the northern parts of India than in the southern, and more frequently found in barren localities than in places with a luxuriant vegetation, we may probably regard both it and *Echis carinatus* as originally northern and desert forms which have been able, owing to some peculiarity of constitution, to survive in southern, and, in the case of *L. striatus*, in rather damp localities, to which individuals have at some period made their way.

Regarding the species in the Rámanád fauna which are not represented even by near allies in that of the North-West Frontier, the majority of them are true Oriental forms widely spread in their own region. Such are *Zamenis mucosus*, which occurs throughout Peninsular India, Ceylon, Burma, in Afghanistan, S. China, Siam, Malaya and Java; *Dendorphis pictus*, a common Indo-Malayan and Ceylonese species; *Tropidonotus piscator*, with a range somewhat similar to that of *D. pictus*; *Naia tripudians*, which is found all over the Indo-Malayan countries and extends its range northwards into Persia, Afghanistan and Turkestan; to a less extent, *Dryophis mycterizans*, occurring throughout the greater part of India, Burma, and Ceylon, and in Siam; and also *Hemidactylus leschenaultii*, known from India, Ceylon, and Malaya.

Leaving out of consideration two other species of *Hemidactylus*, which, being house Lizards, have an extremely wide adventitious distribution, there remains an element confined to Peninsular India and Ceylon, and this may be further subdivided. In the first place we have forms which occur practically all over the Peninsula. Of these the most noteworthy are *Testudo elegans*, *Sitana ponticeriana* and *Chamæleon calcaratus*. These three reptiles occur almost everywhere in Peninsular India except in the lower Ganges plain and on the slopes of the Himalayas. The Indian Chameleon is found on the west coast of the peninsula as far north as Sind; on the east coast it probably does not range much to the north of the extreme south of Lower Bengal, but it is said to be common in Bihar and is certainly abundant in Orissa, in the south of the peninsula and in Ceylon. Probably the climate of Lower Bengal proper is too damp for the three species last mentioned, two of which enjoy a sandy soil, while the Chameleon appears to avoid jungles which are very dense. So far as it is possible to say, what is true of this species is also true of *Calotes gigas*, which may be a race of *Calotes versicolor* in some way adapted for survival in places where vegetation is rather scanty, for even in Colombo, which always strikes the traveller as being so

peculiarly tropical as regards its vegetation, a very great proportion of the flora is not indigenous and the soil is naturally anything but fertile.

Secondly, as regards the peninsular element in the fauna of Rámanád, there are two reptiles which are peculiar to Central and Southern India and to the less densely wooded districts of Ceylon. These are *Hemidactylus triedrus* and *Mabuia bibronii*, while the Tortoise *Nicoria trijuga* var. *thermalis* is probably confined to Ceylon and the immediately adjacent part of the mainland of India, as may also be the case with the Frog *Rana greenii*.

Lastly, there are four Reptiles which have not hitherto been described. One of these, *Teratolepis scabriceps*, belongs to a genus hitherto only known from Central India and Sind, while the others are forms of a genus occurring in Southen Europe, all over Africa, Southern Asia, and tropical America, and throughout the greater part of Australasia. As these three forms all exhibit a very obvious sign of modification in connection with a desert life, and as few resembling them in this respect have been taken elsewhere in India, it is possible that they may have originated in Rámanád.

To sum up, (1) the Reptiles of Rámanád represent, in the main, a fauna widely spread in the Oriental Region and capable of existence under various conditions of life; (2) some of the species are confined to Peninsular India, and (3) a few to the Deccan, Southern India, and Ceylon (the last two catagories consisting chiefly of forms which avoid luxuriant vegetation); (4) several may be of local origin; and (5) one or two have probably extended their range at some period through the waste places of Peninsular India from the north. There is no relationship between the Reptiles of Rámanád and those of the Malabar coast and hills, and such relations as do exist between the former and the Reptiles of Malaya are of a most general character.

NOTES ON COLOUR.

As regards coloration, the most remarkable forms obtained from Rámanád are the three representatives of the genus *Typhlops*, all of which were notable for the small amount of pigment present in their skin. Comparatively few species of their family are known from desert localities in Asia, but of these, several (notably *T. socotranus*) are paler than the majority of their relatives; while some of the Glauconiidæ, a family of similar habits and general appearance, are also pale in dry and sandy areas, as, for example, in parts of Baluchistan and Central America (*Glauconia blanfordii* and *G. myopica*). At first sight it is difficult to distinguish between well-preserved specimens of *G. blanfordii* and of *T. braminus* var. *arenicola*, and I think that there can be no doubt that this is a case of convergence, or of like conditions producing a like modification in species structurally different from one another. Similarly we find that the variety of the common Indian Rat Snake (*Zamenis mucosus*) from Rámanád is paler in colour than that from less sandy parts of India, while *Calotes gigas* and *Sitana ponticeriana*, in spite of markings which become conspicuous in certain situations, have also a general sandy look and are admirably concealed among the shadows cast by scanty vegetation upon sand, the same being true to a lesser extent of *Testudo elegans* and of the typical form of the Cobra, which is generally abundant in the sandy districts of India.

The question at once arises, "How does the sandy coloration of desert animals, which is so well known in most sandy tracts, come about?" These Rámanád forms, occurring in a small and probably very recent desert not separated by any great natural barrier from fertile districts, are of considerable interest as regards this question. The first point that becomes evident on a critical examination of them is that their pale (or paler than ordinary) coloration is not essentially protective in all cases. *Sitana ponticeriana*, *Calotes gigas*, and the typical form of the Indian Cobra, are undoubtedly concealed by their coloration in such localities; but the yellow Cobra of the dense Malayan forests, to which I have referred above, is much more sandy than any of these, while the Rámanád Typhlopidæ and the Rat Snake from the same locality, though possibly rather less conspicuous than if they were darker, are by no means identical with sand in colour, but only have a vague approximation to it. This is especially true in the case of the *T. limbrickii* and the local variety of *Typhlops braminus*, which are distinctly flesh-coloured in life, and of *T. psammophilus*, which, judging from the intense pigmentation of its eyes, may be endowed with some powers of vision and therefore may exist under conditions which would expose it more directly to the effects of light. It is curious that the snakes most highly modified as regards colour in this locality are those which would seem to be the least often exposed directly to light, as burrowers. It is well known, however, that the hair of many tropical mammals, which live more or less in the shade, takes on a reddish or yellowish tinge owing to exposure. I may instance the black-backed variety of the squirrel *Ratufa bicolor*, the back of which, in specimens which have not recently cast their coat, becomes distinctly reddish. We know, moreover, that, even in temperate localities, some slight change may substitute yellow pigment for black in the feathers of birds—a phenomena which occurs not infrequently in the Puffin (*Fratercula arctica*) of Iceland, where individuals with the back mottled with white and yellow, instead of being black, are sometimes produced. It would, therefore, appear possible that even indirect exposure to the steady glare of light that occurs in tropical and subtropical deserts may produce an extreme degree of yellowing in delicate organisms. The transmission of the paler type of coloration thus brought about would not necessarily postulate the transmission of acquired characters; for the light might well effect the embryo in the egg or in the body of the mother, the decrease in intensity of pigmentation of the adult giving, in the latter case, a readier access for the light to the fœtus. Indeed, it is possible that the light might even affect the generative organs of the parents to such an extent that they produced, under all conditions, paler offspring, which were not able to transmit to the third generation the power of producing pigment of great intensity. Such considerations must be largely speculative, until we are in a position to state definitely not only what changes are produced in the coloration of tropical animals, directly or indirectly, by environment, but also what is the structural difference between different animal pigments.

The Reptiles of Rámanád are, for the most part, forms which are sufficiently generalized in coloration, as in structure, to survive in a considerable variety of environments, without dying out individually, or perishing as species by evolution in some new direction; but a few of them exhibit very obvious modifications, probably due directly to the effect of change of environment upon the breed, possibly even upon the individual.

Notes on the Fauna of a Desert Tract in Southern India. Part II.—Insects and Arachnida.

(With one plate.)

By N. Annandale, D.Sc., C.M.Z.S., *Deputy Superintendent of the Indian Museum.*

[Read December 6th, 1905.]

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Introduction.

The season of my visit to Rámanád was not a favourable one for obtaining Insects and Arachnida, and my collection in these groups is small. It is unlikely, except by the merest chance, that any form at all rare in the neighbourhood was taken, and certainly many of the common species were not collected. A considerable part of the collection, moreover, consists of small or obscure Insects and Spiders which I have not ventured to name. Systematic entomology is, among all the branches of zoology, the work of specialists in the various orders and families, and it is only the existence of monographs such as those in the "Fauna of India" series that makes it possible for one, who is not a specialist, to take a comprehensive view of the arthropodous fauna of a locality. Had it not been for the existence in the Indian Museum of specimens named by de Saussure, de Selys, Wood-Mason and other experts, and for the publication, in the series mentioned, of the volumes by Bingham, Distant and Pocock, and, elsewhere, of the papers on Orthoptera by de Saussure, Brunner von Wattenwyl and Bolivar, even the partial working out of this small collection would have been impossible. Nevertheless, the very exclusiveness of the collection gives it a certain interest, and it is important to ascertain any details regarding the habits and modifications of Insects living under conditions so unfavourable. My thanks are due to Mr. C. A. Paiva, Entomological Assistant in the Indian Museum, who has given me help in the preliminary work of sorting and comparison.

Insects and Arachnida collected in Rámanád, August, 1905.

ORTHOPTERA.

Blattidæ

Blatta supellectilium, Serv.
Stylopyga ornata, Br.
,, rhombifolia, Stol.
Pseudoglomeris flavicornis (Burm.).

Mantidæ

Hierodula coarctata, Sauss.

Acridiidæ

Epacromia tamulus (Fabr.).
Chrotogonus oxypterus (Blanch.).
Atractomorpha crenulata (Fabr.).
Acridium æruginosum, Burm.
Demodocus capensis (Thunb.).

Locustidæ

Acanthodis ululina, Guér.

Gryllidæ

Gryllotalpa africana, Pal. de B.
Cophogryllus arenicola, sp. nov.

NEUROPTERA.

Odonata

Brachydiplax sobrina, Selys.

HYMENOPTERA.

Apidæ

Xylocopa amethystina, Fabr.

Eumenidæ

Eumenes conica, Fabr.

Vespidæ

Vespa cincta, Fabr.
Icaria marginata (Lepel).

Sphegidæ

Sceliphron violaceum, (Fabr.).

Formicidæ

Camponotus compressus (Fabr.).

COLEOPTERA.

Scarabæidæ

Phyllognathus silenus (Fabr.).
Anomala fraterna, Burm.
Serica calcuttæ, Brenske.

Cicendelidæ

Cicendela biramosa, Fabr.

Carabidæ

Anthia sexguttata, Fabr.

Buprestidæ

Sternocera chrysis, Fabr.

Cantharidæ

Mylabris balteata (Pall.).

Cerambycidæ

Acanthophorus serraticornis, Oliv.
Batocera rubus (Linn.).

LEPIDOPTERA RHOPALOCERA.

Lycænidæ

Catachrysops pandava (Hors.).

Pieridæ

Catopsilia pyranthe (Linn.).
Terias hecaboides, Ménét.
Terracolus danaë, Fabr.

Papilionidæ

Papilio hector, Linn.

HEMIPTERA HETEROPTERA.

Pentatomidæ

Aspongopus janus (Fabr.).
Piezodorus rubrofasciatus (Fabr.).

Lygæidæ

Lygæus militaris (Fabr.).
Aphanus sordidus (Fabr.).
Dieuches leucoceras (Walk.).
Geocoris tricolor (Fabr.).
Astacops sp.

Hydrometridæ

Mesovelia mulsanti, Buch. White.
Gerris fossarum (Fabr.).

Reduviidæ

Physorhynchus coprologus, sp. nov.

Capsidæ

Lygus biseratensis, Dist.

HEMIPTERA HOMOPTERA.

Membracidæ

Leptocentrus taurus (Fabr.).

SCORPIONES.

Buthidæ

Buthus tamulus (Fabr.).

Scorpionidæ

Palamnæus swammerdami *subsp.* lucidipes, Smn.

ARANEÆ.

Theraphosidæ

Pœcilotheria striata, Pck.

Pholcidæ

Artema atlanta, Walck.

Clubionidæ

Heteropoda venatoria (Linn.).

ACARI.

Trombidiidæ

Trombidium grandissimum (Koch.).

ORTHOPTERA FROM RÁMANÁD.

I. Blatta supellectilium, Serv.

B. cubensis, *de Saussure*, *Mém. Mex.*, III., Orthoptères, p. 108, pl. I., fig. 15.

B. (Phyllodromia) supellectilium, *Bolivar in Ann. Soc. Ent. France*, LXVI., 1897, p. 289.

Phyllodromia supellectillium, *Kirby*, *Cat. Orthopt.*, I., 1904, p. 88.

A single male from the town of Rámanád. On the whole it agrees with de Saussure's figure of *B. cubensis*, but is distinctly smaller and less brilliantly coloured than the individual depicted by him. It has indications of a pale triangle [1] on the dark part of the thorax, but not so distinctly as Kirby's *H. delta* (Distant, *Ins. Tranvaal*, I., pl. I., fig. 4).

Bolivar has recorded the species from Southern India, and it is found throughout the Peninsular region. It also occurs in Brazil, Cuba, the Antilles and Tropical Africa. It was hitherto represented in the collection of the Indian Museum by a single specimen only, but it is not uncommon in houses in Calcutta and at Chakardharpur in Chota Nagpur. In Cuba it is said to be extremely common.

II. Stylopyga ornata, Br.

Dorylaea ornata, *Kirby*, *Cat. Orthopt.*, I., 1904, p. 135.

A large female, running on the sand a short distance above tide-mark at night Kilakarai, Gulf of Manaar.

We have an imperfect female (named by de Saussure) from Mysore. Kirby gives the distribution, " India (?)." The species is evidently rare.

[1] The absence or presence of this mark seems, judging from a large number of examples recently killed and preserved, to be chiefly or entirely due to the method in which individual specimens are dried. (March 10th, 1906.—N. A.)

III. Stylopyga rhombifolia, Ställ.

S. decorata, *Brunner in Ann. Mus. Genova*, (2) XIII., 1893, p. 35.

Dorylaea rhombifolia, *Kirby, Cat. Orthopt.*, I., 1904, p. 135.

Solitary females of this Cochroach are not uncommon in August under stones on the stretches of almost bare sand on the Indian shore of Pamben Passage.

The species is widely distributed in the Tropics of both Hemispheres. We have a specimen from Zanzibar, and others from Java, Upper Burma, Chota Nagpur, and Calcutta, in the gardens of which the species is common under flower-pots. Brunner records *S. decorata* from Mandalay. There are specimens in the collection of the Entomologist of the Government of India from Bombay and Bihar.

IV. Pseudoglomeris flavicornis. (Burm.

P. flavicornis, *Bolivar in Ann. Soc. Ent. France*, LXVI., 1897, p. 300; *Kirby, Cat. Orthopt.*, I., 1904, p. 190.

Several males and females from the town of Rámanád. The latter agree very closely, except that their feet are rusty instead of white, with Bolivar's description of an Indian specimen which he identified a little doubtfully with Burmeister's *Derocalymna flavicornis*.

In the male the head, pronotum, lower surface of the body and base of the tegmina are pitchy black, which fades to very dark brown towards the margin of the tegmina; the anterior part of the wings is tinged with the latter shade, the posterior clear and almost colourless; the antennæ, tibiæ and femora are rusty, the palpi bright yellow, the tarsi and cerci fulvous, the dorsal surface of the abdomen rich golden brown, becoming darker in front. The pronotum entirely covers the head; it is large, depressed, subtriangular, densely punctured, slightly raised in the centre; the tegmina are long and narrow, rounded at the extremity; the wings large. The abdomen is flat above and below, having extremely little depth; the wings and tegmina fit very close to it when folded. The cerci are very short, as also are the legs.

In life the body of the female is even less compressed than would appear from dried specimens.

Both sexes are admirably fitted for living under the bark of trees, in which position I found them abundant on Tamarinds at Rámanád. They insinuated themselves with such agility into the lowest cracks that it was very difficult to dislodge them. The slightly-arched dorsal surface of the females doubtless protects them from being crushed under such conditions, while the flatter males are shielded by their tegmina.

D. flavicornis was originally described from Java; Kirby records the species from Tenasserim and Cambodia; Bolivar's specimen apparently came from Southern India. The following are the dimensions of specimens from Rámanád:—

	♂	♀
Length	13 mm.	11 mm.
Breadth of pronotum	5 ,,	6 ,,
Expanse of wings	26 ,,	—

V. Hierodula coarctata, Sauss.

H. coarctata, *de Saussure in Bull. Ent. Suisse*, III., 1869, p. 67, ♀ ; *Bolivar*, *op. cit.*, p. 311, ♂ ; *Kirby*, *Cat. Orthopt.*, I., 1904, p. 245.

Two females from Rámanád. Immature specimens were common in August on bushes of *Cassia auriculata* at Mandapam.

Specimens have been recorded from Australia, but it is a little doubtful whether they really belong to the same species. The true *H. coarctata* is common in all the more sandy parts of India, from Sind to Bengal and Cape Comorin. Some of the specimens in the Indian Museum have been identified by de Saussure.

The flowers of *Cassia auriculata* are by far the most conspicuous objects in the sandy wastes of Rámánad, and there can be no doubt that the Mantis benefits as regards its food by haunting their vicinity. Cf. pp. 185-186, *antea*.

No specimens of the Phasmidæ or the Earwigs were seen in Rámanád.

VI. Epacromia tamulus (Fabr.)

Common together with the succeeding species. A widely distributed form in India.

VII. Chrotogonus oxypterus (Blanch.)

Ch. oxypterus, *Bolivar*, *op. cit.*, p. 605.

This species is very common on sand, but not on the seashore. Although it exhibits considerable variation as regards the minute details of its coloration, it is always most inconspicuous when resting on a sandy soil, especially in the shade of the wiry grasses and thorns which are produced by such a soil. As a rule, the first indication of its presence is given, at any rate to a human eye, by the movement of its leap, which is very long for the size of the insect.

I think that I am right in the identification, *Ch. oxypterus*, judging from Bolivar's remarks, appears to be the common one in Madura, but the species are difficult to distinguish except by comparison, and *Ch. trachypterus* is the only form authentically named that I have been able to examine.

VIII. Atractomorpha crenulata (Fabr.).

Not uncommon at Rámanád among low vegetation.

IX. Acridium aeruginosum, Burm.

A. aeruginosum, *Cotes*, *Ind. Mus. Notes* III., 1898, p. 21.

According to Cotes, this Locust is very variable in colour and sometimes becomes destructive on account of its numbers in Madras. I only saw a few specimens, all of which were very small and pale in colour.

X. Demodocus capensis (Thunb.).

Only one specimen taken. It is considerably smaller and paler in colour than individuals in the Museum from Calcutta. Probably both it and the examples of the preceding species may be taken to represent dry-season forms.

XI. Acanthodis ululina, Guér.

A specimen was brought me at Rámanád clinging to a stick. Its attitude was exactly that of *Sathrophyllia rugosa* as figured by Willey in *Spolia Zeylanica*, Vol. II. This attitude is one maintained during rest by many of those Pseudophyllides which resemble the bark of trees (*e.g. Acanthodis imperealis*). Leaf-like species frequently also adopt it, especially during early life before the wings and tegmina are fully developed. In the latter case the position chosen is the midrib or stalk of a green leaf, in the former a tree trunk or withered twig. It is less easy to startle *Acanthodis ululina* from this admirably adaptive attitude than is usually the case with the bark-like or stick-like Phasmides, which frequently assume a very similar one, while the species which live among grass or canes often spread out their limbs in an irregular formation.

XII. Gryllotalpa africana, Pal. de B.

This appears to be the common peninsular species, while *G. vulgaris* is more abundant on the North-West Frontier. A specimen, of rather small size, of *G. africana* was brought to me at Rámanád.

XIII. Cophogryllus arenicola, sp. nov.

♀ Body cylindrical, stout; head large, globular, with broad inter-antennal space; pronotum large, much broader than long, simple; tegmina persisting as minute vestiges, cerci long, provided with long, fine hairs to the tips, ovipositor not more than half the length of the abdomen, barely longer than the cerci, feebly expanded at the tip. Colour varying with the state of preservation; in life pale testaceous, clouded with brown on the outer surface of the posterior femora, with brown markings at the lower extremity of all the femora, and sometimes with a row of dark spots across the head between the eyes. Surface smooth, with fine scattered hairs, irregularly shaped tracts of grey pubescence on the lateral lobes of the pronotum.

	mm.
Total length	27·5
Breadth of pronotum	6
Length	4·5
Length of cerci	7
Length of ovipositor	8

This species is not uncommon under stones on the sandy wastes at Mandapam, but only females were seen. Each had formed round itself an oval wall of sand grains, which were loosely fastened together. Above, this wall was fastened to the base of the stones;

below it terminated in the general surface of the sand. Probably the cricket protects itself in this way against centepedes, a species of *Scolopendra* being abundant under the stones.

ORTHOPTERA OF THE SEISTAN MISSION.

We have lately received at the Museum a small collection of insects made by a collector attached to the Seistan Boundary Commission under Sir A. H. McMahon. The specimens appear to have come mostly from the British side of the Perso-Baluch frontier; but they have no exact localities. It struck me that it might be interesting to compare this collection, made in a sandy and barren district at the other extremity of the Indian Empire, with my own from Rámanád; but I found it impossible to identify species belonging to any other group but the Orthoptera, although some general remarks on the collection are given on later pages. The following is an annotated list of the few Orthoptera,[1] taken.

MANTIDÆ—

1. PSEUDOMANTIS MACULATA (Thunb.), ♀ ♂.

Widely spread in the Oriental Region.

2. BLEPHAROPSIS MENDICA (Fabr.).

Though the only specimen obtained is immature, I have no doubt as to its identity. We have a male from Sind, identified, dissected and carefully carded by Wood-Mason, which agrees closely with the descriptions. *B. mendica* is recorded from the Canaries, N. Africa and N.W. Asia.

ACRIDIIDÆ—

3. ACRIDIUM PEREGRINUM, Oliv.

The common Locust of Northern India.

Also two other species which I have been unable to identify.

GRYLLIDÆ—

5. GRYLLOTALPA VULGARIS, Latr.

A large series, most of the specimens being of considerable size.

6. GRYLLUS GRACILIPES, Sauss. ♂ ♀.

I think the two specimens obtained belong to this species, but cannot be certain.

7. LIOGRYLLUS BIMACULATUS (De Geer) ♀.

The spots at the base of the tegmina are rather obscure in the one specimen obtained. This is one of the commonest of the Indian Crickets.

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[1] There is also an Earwig (*Lapidura riparia* Pall.) in the collection. *See* Burr in *Journ. As. Soc. Bengal*, 1905, p. 29.

Locustidæ—

8. Schizodactylus monstrosus, Drury.

Common in sandy soil in the neighbourhood of water in some parts of Northern India, but rather local; flies to light at night, often in considerable numbers. Only two specimens were obtained on the Perso-Baluch border.

NEUROPTERA FROM RÁMANÁD.

The only species of the true Neuroptera observed or collected were two Myrmeleonides, which I have been unable to identify. One, with transparent and colourless wings, was common above tide-mark on the shore at Pamben, the other occurred on the sand a short distance inland, being a larger and stouter form with wings spotted with black. Two somewhat similar species are represented in the Seistan collection. The "Ant Lions" are naturally restricted to localities where the soil is sandy, as sand is the suitable material for the pitfalls of their larvæ.

Of the Pseudo-Neuroptera, several species of Dragon Flies occurred round the slightly brackish pools in the sand near Pamben. Only one specimen was, however, taken, and one Embiid.

XIV. Brachydiplax sobrina, Selys.

A single female from Pamben, where the species is common. This specimen agrees closely with a Burmese example in the Museum named by de Selys.

HYMENOPTERA FROM RÁMANÁD.

The Hymenoptera in my collection form only a small proportion of the species that occur commonly in Rámanád. Several Ants abound, and the number of Mason Wasps and the like which frequent the edges of the tanks is certainly considerable. A large proportion of the Seistan collection consists of members of this order.

XV. Xylocopa amethystina, Fabr.

A single female was taken on Rámeswaram Island. Its right front wing is injured in a manner which suggests that it had been seized by a bird and so broken.

XVI, XXVII. Eumenes conica & Vespa cincta, Fabr.

A single specimen of each.

XVII. Icaria marginata (Lepel).

A very common species at Rámanád. Bingham gives the distribution: "Southern India." There are memerous specimens from Sikkim and Northern Assam in our collection which have been named *Icarai marginato* by Dudgeon and others. They doubtless represent a local race of the species, the ground colour being a very dark-brown instead of the bright golden-brown of the typical form, which is that of Rámanád.

XIX. Sceliphron violaceum (Fabr.).

This species was peculiarly common on Rámeswaram Island at the time of my visit. Large numbers of individuals were noted in the evening clinging together to loose ends of thatch hanging from the eaves of a house at Pamben. They exhibited considerable individual and sexual variation as regards size.

XX. Camponotus compressus (Fabr.).

C. maculatus, *race* compressus, *Wroughton in Journ. Bombay Nat. Hist. Soc.*, VII, p. 30.

A very common species both at Mandapam and at Rámanád.

Its habits in the district under consideration evidently differ somewhat from those of colonies living in the neighbourhood of Bombay as described by Wroughton. The nests are made either in the bare sand, irrespective of any shade, or in the walls and foundations of houses. Winged males and females were noted in August in the nests, and flew to light at night after a shower of rain.

COLEOPTERA FROM RÁMANÁD.

The bulk of the whole collection consists of small Coleoptera, only a few of which it has been possible to name. Unnamed forms belong to the Melolonthidæ, Carabidæ, Bostrychidæ, Elateridæ, Tenebrionidiæ, Chrysomelidæ (gen. *Gallerucella*), Curculionidæ, and one or two of the more obscure aquatic families; the majority are Melolonthidæ (Coprides), and there are not more than two species of each of the other families named. A *Gallerucella* was common at Mandapam in the flowers of *Cassia auriculata*, and there were numerous minute Water Beetles in all the pools and tanks both on Rámeswarem Island and on the mainland. A small black Tenebrionid was remarkable for the great, powers of resistance it exhibited. Unlike the other Beetles noted, it did not remain in the shade or concealed during the heat of the day, but walked about on the bare sand. A specimen put in a fresh cyanide bottle did not succumb for 48 hours. A small black-and-white weevil showed similar but less marked immunity in the same circumstances. None of the unnamed species exhibit any marked peculiarity of structure, and all, with the exception of the weevil mentioned, are dark or inconspicuous in colour, without showing any particular adaptation in this respect to their environment.

As I have no particular comment to make on the majority of the specimens, it will be unnecessary to note the whole of the species individually.

XXIII. Serica calcuttæ, Brenske.

S. calcuttæ, *Brenske in Ind. Mus. Notes*, 1899, IV. p. 176, pl. XIII. fig. 3.

A species of *Serica* is common in Rámanád on the flowers of *Cassia auriculata* which appears to be identical with this form. I have compared specimens with Brenske's types in the Indian Museum.

XXIV. Cicendela biramosa, Fabr.

This is a common species in Southern India. I found it very common on the sea-shore at Pamben, in a very similar environment to that in which *C. sumatrensis* [1] occurs on the east coast of the Malay Peninsula.

On several occasions a Robber Fly of the genus *Promachus* was observed carrying off specimens of *C. biramosa* as its prey.

XXVI. Sternocera chrysis, Fabr.

This species evidently æstivates during dry weather, as large numbers appeared at Rámanád on the day following a shower of rain, all having a hard, fully formed integument.

I believe that the different phases which some have regarded as separate allied species, but which are usually now grouped together under the above name, are, to some extent, due to the state of preservation of specimens.

XXVII. Mylabris balteata (Pall.).

This conspicuous little Beetle was common at Pamben near the sea. I saw it on the wing at all times of day, and watched an individual feeding on a dead shoot of *Spinifex squarrosus* in the evening.

LEPIDOPTERA RHOPALOCERA FROM RÁMANÁD.

XXXI. Catachrysops pandava (Hors.).

Common at Pamben, chiefly among the stunted thorns just above tide-mark on the shore. Specimens fresh and unworn.

XXXII. Catopsilia pyranthe (Linn.).

Common at Rámanád and at Ráméswarem, less so at Pamben and Mandapam. Specimens in excellent condition.

XXXIII. Terias hecaboides, Ménét.

Not very common. In good condition.

XXXIV. Terracolus danaë (Fabr.).

Not uncommon at Rámanád. The specimens are in very bad condition.

XXXV. Papilio hector, Linn.

Probably the commonest and certainly the most conspicuous Butterfly at Pamben and Mandapam; not quite so abundant at Rámanád.

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[1] See Robinson, in Annandale and Robinson, *Fascic. Malay., Zool.*, Vol. I., p. 180.

This fine species is most frequently seen on the wing a short time before sunset, or at any rate after the heat of the day has abated. It flies high, but descends to feed on the flowers of certain plants which grow in the sand.

HEMIPTERA HETEROPTERA FROM RÁMANÁD.

The Hemiptera are fairly well represented in the collection, considerably more so than in that of the Seistan Commission. In addition to the species named, several small representatives of the Notonectidæ were obtained from pools on Rámeswaram Island.

XXXVI. Aspongopus Janus (Fabr.).

Very common in gardens at Rámanád, where it seems to feed on a variety of plants.

XXXVII. Piezodorus rubrofasciatus (Fabr.).

Abundant on bushes of *Cassia auriculata* at Mandapam.

XLII. Astacops, sp.

A specimen was obtained at Rámanád which differs from the type of *A. occidentalis*, Distant, (the only species of the genus as yet recorded from India) in having the abdomen of a uniform pale fulvous below and in its small size (length 5 mm.). It may represent a variety of this form.

XLIII. Mesovelia mulsanti, Buch. White.

Although immature specimens only were obtained, I have very little doubt as to their species, as I have compared them with fresh examples of different ages from Calcutta.

At Pamben, this little Surface Bug was abundant on slightly brackish pools. It runs with great rapidity on the surface of the water and appears to be common all over India.[1]

The larvæ are of an almost uniform pale-green.

XLIV. Physorhynchus coprologus, sp. nov.

♀ Apterous; body moderately stout; head narrow, the ante-ocular part not much longer than the post-ocular; anterior section of the pronotum considerably longer than the posterior, globose, deeply corrugated longitudinally; dorsal surface of abdomen almost flat, finally striated transversely, the margins flattened and turned upwards;

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[1] I take this opportunity to record the minute species *Microvelia singalensis*, Kirk., from Calcutta, where it is common on the tanks, being easily distinguished from its equally minute congener, *M. repentina*, Distant, on account of its spotted appearance. The former species has lately been recorded also from Java by Breddin in *Mitt. Nat. Mus. Hamburg, xxii*, p. 129. (March 8th, 1906.—N. A.)

ventral surface concave. First joint of the antennæ shorter than the second; the anterior femora feebly thickened, non-tuberculate. The body, limbs and antennæ finely pilose. The head, rostrum, pronotum, dorsal surface of the abdomen and the femora dull black; the ventral surface shining black; hairs piceous; antennæ, tibiæ and tarsi ferruginous.

A single specimen, taken at Rámanád in a manure-heap in a garden.

XLV. Eygus biseratensis, Distant.

L. biseratensis, *Distant in Annandale and Robinson, Fascic. Malay. Zool.* 1, p. 269, pl. XVI, fig. 11.

A single specimen, from the flowers of *Cassia auriculata at* Mandapam.

This individual agrees closely with Distant's figure P, the type from the Malay Peninsula, except that the cuneus is slightly paler in colour.

The species, found in Ceylon, Burma, and the Siamese Malay States, does not appear to have been previously recorded from India proper.

Hemiptera Homoptera.

Of this suborder, only a few individuals were seen. In addition to the common *Leptocentrus taurus* (Fabr.) one or two minute Jassids and a small Fulgorid were obtained. These I have not been able to identify.

ARACHNIDA FROM RÁMANÁD.

The Arachnida, speaking generally, are even more poorly represented than the Insects during the dry season in Rámanád. Among the spiders, a few Attidæ were common on the walls of houses; while numbers of Scorpions, belonging to the two forms noted above, were brought me at all my halting places. *Trombidium grandissimum* and a Tick, which attacked dogs and cattle, must have been extremely abundant both on Rámeswaram Island and on the mainland. An unnamed spider of the family Thomisidæ was observed in the yellow flowers of *Cassia auriculata* to which it was admirably adapted as regards colour.

XLVI. Buthus tamulus (Fabr.).

All the specimens examined belonged to the typical form of this species, which, according to Pocock, is the common variety of Southern India. In life, the female has a greenish tinge, which soon disappears in spirit.

XLVII. Palamnæus swammerdami subsp. lucidipes, Smn.

This subspecies, distinguished from the typical form by its yellow legs, occurs commonly all over the Rámanád desert, in which I did not see the typical form. The yellow of the legs is far browner in life than would appear from the examination of specimens preserved in spirit. Pocock gives Rámanád and Trichinopoly as localities.

XLVIII. Pœcilotheria striata, Pock.

This magnificent spider is apparently not uncommon on *Acacia arabica* near Pamben. It is probably confined to Southern India, the *provénance* of the type being, according to Pocock, doubtful.

XLIX. Artema atlanta (Walck.).

This species frequently spins in the dark corners of houses, but it is very abundant among the stunted thorns on the sea-shore at Pamben, their matted branches forming a very suitable support for the loose and irregular web.

L. Heteropoda venatoria (Linn.).

The common house-spider at Rámanád, as in most parts of India and in many tropical countries. Pocock, however, records a second species, *H. faurei*, from the same locality.

LI. Trombidium grandissimum (Koch).

T. grandissimum, *Hill in Journ. As. Soc. Bengal*, 1905, p. 74.

Very little seems to be known as regards the habits and distribution of this handsome scarlet Mite. It appears to occur in all parts of India where the soil is sandy, in Burma, and possibly in the Himalayas; but I have not seen specimens from the Hills.

In the drier regions it spends a considerable part of the year buried in the sand, but when the rains commence, it leaves this retreat immediately and lives for a short time on the surface. Numerous specimens appeared during my visit to Rámanád, crawling on the sand the day after a shower of rain. They did not mount upon herbs or shrubs. No more rain followed, and by the third day they had disappeared again. Some specimens were lately sent to me from Pamben, rolled in paper with a little sand and packed with some preserved specimens in a tin-box. They were nearly a week on the way and arrived in a torpid and shrivelled condition. I placed them in an insect cage with some damp grass, and they gradually began to move about. Shortly afterwards they each excreted a white liquid, which soon became solid and took on a chalky consistency. By the next day the majority of them had considerably increased in bulk, and those which had not done so, quickly died. I could not discover, however, that they had eaten anything, and they refused to take any notice of either succulent leaves, soft-bodied insects (such as caterpillars, small Homoptera, etc.) and earthworms placed in their way. At night they remained still and hid themselves under the grass, but during the day-time they became very active, showing an extraordinary facility in finding any opening in their cage and attempting to crawl through it.

As many of them died and I was unable to discover how to keep them alive, I placed the survivors in a glass bowl with damp sand at the bottom. They immediately began to burrow, and, as the sand was permitted to dry, many of them sank again into a torpid condition, in which they have remained for some weeks. The rest soon died. The way in which they burrowed was peculiar. They first removed a certain number of sand-grains very deliberately by means of the first pair of legs, which they used very

little in progression and generally brandished in the air like antennæ. (The two distal joints of these legs are somewhat enlarged and are quite devoid of hair.) The palpi were also employed in removing the sand-grains. As soon as a slight cavity had been formed in this way, the cephalothorax and the anterior part of the abdomen were inserted into it. The liquid, or semi-liquid, contents of the abdomen were then squeezed away, by contraction of the body all towards the posterior extremity, which became rounded and globular. A little more of the abdomen was then inserted, and its contents were then moved forward; so that the animal progressed downwards by alternately contracting and dilating itself in a slow and orderly fashion.

The material which rendered this action possible is a yellowish oil, which becomes darker and more solid on exposure to the air. The whole body cavity was closely packed with this substance, but not so closely as to render the abdomen turgid. This is evidently the oil used as a drug in Northern India and lately analysed by Mr. Hill, the red colour he ascribes to it being due to the pigment of the integument, which must have been extracted with it and not due to any constituent of itself. The pigment fades slowly in spirit; probably owing to a misunderstanding as to its nature and uses, Europeans, both in Northern and in Southern India, frequently call the Mite the "Cochineal Insect." Doubtless the oil has a double function, (1) as a reserve food-supply which may be gradually drawn upon during æstivation or during brief periods of activity; and (2) as a hydraulic agency in burrowing.

I notice that Ants, which in Calcutta even kill living cage-birds, and remove, as a rule, any particle of fresh animal or vegetable matter to which they can gain access, take no notice of either dead or living specimens of the Mite. The same is true of Cockroaches and of Spiders belonging to the families Attidæ and Thomisidæ, to which I have offered the Mites; while a hungry Harrewa (*Chloropsis jerdoni*), which immediately afterwards eat a grasshopper, did not make the slightest attempt to peck at a living *Trombidium* placed before it in its cage, but, on the contrary, seemed alarmed and avoided the part of the floor of the cage on which the Mite was crawling.

REMARKS ON DISTRIBUTION.

The interest of the collection is, from a geographical point of view, mainly negative. The great majority of the species represented have a wide distribution and are able to exist in environments of many different characters. Such a form, for example, as *Blatta supellectilium* is spread through the tropics of both Hemispheres and occurs both in arid and in extremely damp localities. Even more striking is the case of another widely distributed Cockroach, *Stylopyga rhombifolia*; for this species cannot fly from one place to another, and yet it is by no means confined to the close proximity of man. It is all the more curious to find that its ally, *S. ornata*, is apparently a rare and local form, although there is nothing in the specific characters of either species which would explain this difference in distribution. Both the Cockroaches last named are, to some extent, modified species, the wings having become degenerate; while *Pseudoglomeris flavicornis* has undergone very much greater modifications in adaptation to its mode of life, the retiring

character of which has probably caused its existence to be overlooked in many localities in which it is abundant. It is very possible that *Cophogryllus arenicola* has been passed over in the same way. The other Orthoptera obtained require no special comment from the point of view of geography.

All the Hymenoptera brought from Rámanád belong to species which have a wide distribution in India and the surrounding countries, with the possible exception of *Icaria marginata*, which, however, is represented by a closely allied race in North-Eastern India.

The small number of Beetles which it has been possible to identify, and the little that is known about the Indian representatives of some of the more obscure or less attractive families, prevent any statement as to the geographical character of the Coleopterous Fauna of the neighbourhood.

Three out of the five Butterflies obtained are widely distributed forms. Of the two which remain, *Papilio hector* appears to be somewhat local in its occurrence, which is limited to the eastern half of India proper, the Himalayas, and Ceylon. It is found chiefly in sandy localities. *Catachrysops pandava* is a form characteristic of Southern India and Ceylon.

The Oriental Hemiptera, at any rate as regards the smaller species, are as yet very imperfectly known, despite the great advance which has been made in their study of recent years. Many of them have a very extensive distribution.

Of the Arachnida, *Palamnæus swammerdami lucidipes* is probably confined to the sandy districts of Southern India, and the same may be true of the typical form of *Buthus tamulus*. *Pœcilotheria striata* belongs to a genus characteristic of Southern India, while *Artema atlanta* and *Heteropoda venatoria* have a wide distribution, which in the case of the latter is due, at least partly, to the agency of man. *Trombidium grandissimum* occurs in Southern Europe and probably in other countries intermediate between the Mediterranean and India, in which it is found in localities widely separated from one another both in space and in climate.

It is perhaps worth noting that not a single species in any order of the Arthropoda is represented both in the Seistan Commission's collection and in my own from Rámanád.

The above remarks show clearly that while the Insects of Rámanád may include among them certain forms (e.g., *Cophogryllus arenicola*) more or less adapted for living amongst barren sand, they cannot be said as a whole to form part of a Desert Fauna, the great majority of the more conspicuous forms being organisms of a hardy and little specialized nature which can endure a great variety of outward conditions without specific extinction.

REMARKS ON COLOUR.

If only a few of the Insects and Arachnida noted in Rámanád can be said to be definitely adapted, as far as coloration goes, to their surroundings, the great majority of them are dull and inconspicuous. This is generally the case with the Arthropodous Fauna of desert localities. It may be more than a coincidence, however, that a very large proportion of the few conspicuous forms obtained in Rámanád owe their

conspicuous character to the presence of red pigment in their integument, often contrasted with black. *Aspongopus janus* and *Lygæus militaris*, belonging to different families of the Hemiptera, are red and black; *Papilio hector* is black, red, and white; *Terracolus danaë*, white, red, and black; *Mylabris balteata*, red, orange, and black; *Trombidium grandissimum*, wholly red. Perhaps the only other species which can really be called brilliant, namely, *Terias hecaboides*, is yellow and black. It should be remarked, however, that this predominance of scarlet and allied colours does not occur in all deserts. It is not exemplified among the specimens brought back by the Seistan Mission, nor, so far as we have data, among those from other sandy and barren localities in India. I have not seen it mentioned as a feature of other sandy regions. Yellow and red are, however, according to Camerano, the characteristic colours of the fauna of the Oriental Region as a whole. Perhaps, if this author's contention can be upheld, their marked occurrence in Rámanád is only another proof of the generalized character of the Insect fauna of the neighbourhood.

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[1] *Zool. Anz.*, 1884, p. 341.

Notes on the Fauna of a Desert Tract in Southern India. Part III.—A List of a small collection of Mammals from Rámanád.

By R. C. Wroughton, F.E.S., *Communicated by* N. Annandale.

[Read Feb. 7th, 1906.]

[Through the kindness of Mr. Oldfield Thomas, F.R.S., the following list of the mammals procured during the month of August in the Rámanád subdivision of the Madura District has been drawn up in the British Museum. So little is known of the fauna of this curious little desert tract that it has seemed worthwhile to publish the list. I have added a few notes, which are distinguished from Mr. Wroughton's text by being enclosed in square brackets, and also references to the late Dr. W. T. Blandford's volume on the Mammals in the "Fauna of India" series. The measurements given were taken on the fresh specimen. —N. A.]

1. Vulpes bengalensis, Shaw.

[*V. bengalensis*, Blandford, p. 148.]

Skin quite normal.

[An adult female. Measurements: Head and Body = 485 mm., Tail = 290 mm., Ear = 70 mm., Hind foot = 111 mm.]

2. Erinaceus micropus, Blyth.

[*E. micropus*, Blanford, p. 218.]

Apparently quite normal.

[An adult male from near Kilakarai on the Gulf of Manaar. Measurements: Head and Body = 137 mm., Tail = 8 mm., Ear = 23 mm., Hind foot = 27 mm. Appears to be very local in Rámanád. Local name = *Multupundru* (thorn-pig). The flesh fried in *ghi* is used as medicine for whooping-cough.]

3. Funambulus palmarum, Linn.

[*Sciurus palmarum* (*partim*), Blanford, p. 383.]

Rather dull coloured, otherwise normal.

[An adult male with an injured tail. Measurements: Head and Body = 163 mm., Ear = 16 mm., Hind foot = 38 mm. This squirrel is very common throughout Rámanád. All the specimens seen resembled the one procured in colour. On several occasions I watched an individual digging up ants from their nests in the sand by means of its forefeet.]

4. Tatera cuvieri, Waterhouse.

[*Gerbillus indicus* (*partim*), Blanford, p. 396.]

I have no doubt that this form (*cuvieri*) will be separated from *indicus* when examination of the group is complete.

[Several skins and specimens in spirit from Rámeswarem Island and the mainland of Rámanád. Measurement of an adult female: Head and Body = 134 mm., Tail = 183 mm., Ear = 18 mm., Hind foot = 39 mm, Eye black and very large, having, in consequence of its protrusion, almost a diseased look. This species is very common in Rámanád. It digs burrows at least three feet deep. The Hindus of the district, who call it *velyellei* (white rat), are fond of its flesh, which they grind up with various spices.]

5. Mus rattus var. rufescens, Blyth.

[*M. rufescens*, Blanford, p. 407.]

[The common house-rat both on Rámeswarem and on the mainland.]

6. Mus, sp.

Perhaps this will prove to be Blyth's *albidiventer*.

[Six specimens in alcohol. Mr. Oldfield Thomas tells me that he prefers to leave this species unidentified for the present, until someone shall work out the mice of India in detail. Very common round Rámanád town, digging very shallow burrows in the sand, in which the female brings forth the young.

7. Leggada buduga, Gray.

[Seven specimens in alcohol. Very common together with the last, which it resembles in habits.]

8. Nesokia bengalensis, Gray and Hardwicke.

[*N. bengalensis*, Blanford, p. 423.]

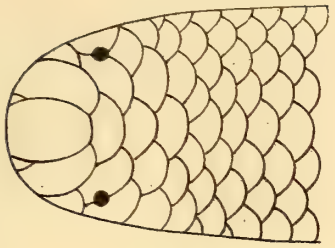
The specimen is quite young but the skull is proportioned as in *bengalensis*. Tail long and hind foot large.

[A female from Kilakarai. Head and Body = 175 mm., Tail = 175 mm., Ear = 24 mm., Hind foot = 44 mm.]

[In addition to the above, an adult male Dugong (see the Journal of the Society, 1905, p. 238) was obtained at Kilakarai. A Cat, which appears, from description given me, to be *Felis viverrina*, is not uncommon among the reeds at the edge of tanks near the town of Rámanád, where the Jackal also occurs. A Hare (probably *Lepus nigricollis*) occurs at a few places in the subdivision, notably on Rámeswarem and on one of the smaller islands in the Gulf of Manaar. None of the larger mammals appear to haunt the desert tract.]

EXPLANATION OF PLATE IX.

Fig. 1	*Teratolepis scabriceps*	... (slightly enlarged).
,, 1*a*	Chin	... (enlarged).
,, 1*b*	Hind foot	... (enlarged).
,, 1*c*	Fore foot	... (enlarged).
,, 2	*Calotes gigas*, Base of tail... ...	... (nat. size).
,, 2*a*	Portion of crest	... (× 2).
.. 2*b*	Scales, on base of tail ...	... (enlarged).
,, 2*c*	Ordinary tail scales... ...	... (enlarged).
Figs. 3, 3*a*	*Typhlops limbrickii*	... (enlarged).
,, 4, 4*a*	,, *psammophilus* ...	... (enlarged).



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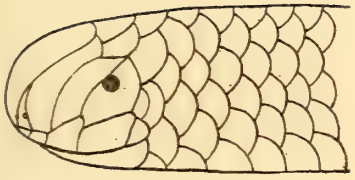
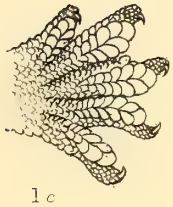
1 *a*.

1 *b*

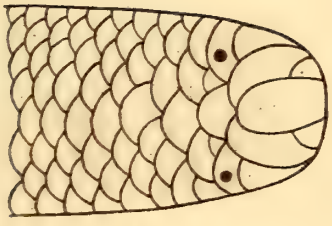


3 *a*

1.



1 *c*



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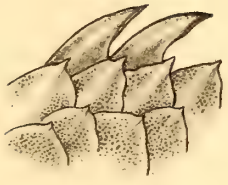
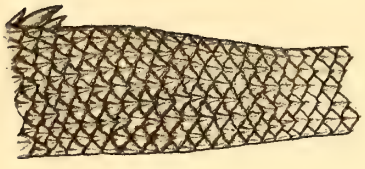


2 *a*.



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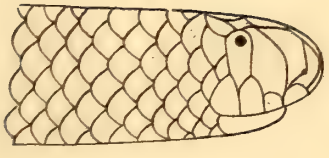
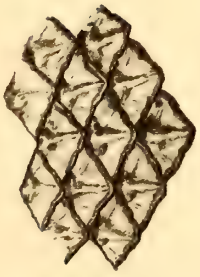
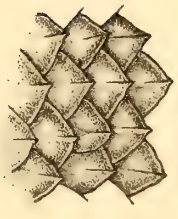


4 *a*



2 *b*



2 *c*

Photogravure

Survey of India Offices, Calcutta, December, 1905

REPTILES OF RÁMANÁD.

EXPLANATION OF PLATE X.

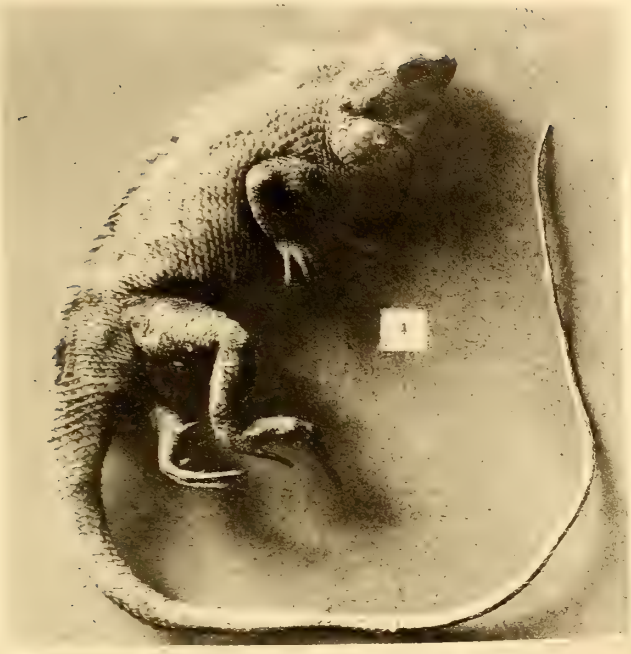
Fig. 1 *Calotes versicolor*, adult male ... ... (slightly enlarged)

,, 2 *Calotes gigas*, female ... ... (reduced).

„ 3 „ adult male ... ... (slightly enlarged).

„ 4 „ „ .. .. (reduced).

4.



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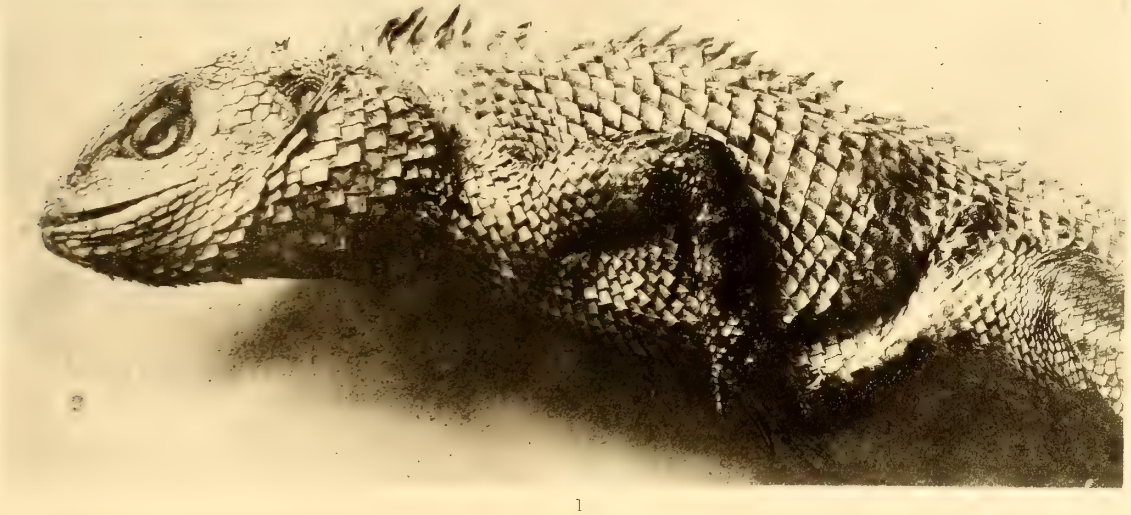


1

Photogravure. Survey of India Offices, Calcutta, February 1906

CALOTES GIGAS AND CALOTES VERSICOLOR

EXPLANATION OF PLATE XI.

Fig. 1 *Pseudoglomeris flavicornis*, Burmeister, male × 2.

,, 1*a* ,, ,, ,, ,, nat. size.

,, 1*b* ,, ,, ,, female ,, ,,

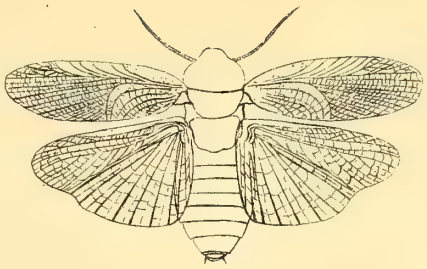
,, 2 *Cophogryllus arenicola*, sp. nov., female, nat. size.

,, 2*a* ,, ,, ,, ,, head × 2.

,, 2*b* ,, ,, ,, ,, ovipositor from below × 2

,, 3 *Physorhynchus coprologus* sp. nov. female × 2.

Fig. 4, 4*a* *Trombidium grandissimum*, (Koch.) × 2.



1×2

1a

1b

4 ×2

4a

2a×2

1c

2b×2

3×2

2

D.N. Bagchi del. et lith.

INSECTS AND ARACHNIDA FROM RAMÁNÁD.

1. Pseudoglomeris flavicornis (Burm.)
2. Cophogryllus arenicola, sp. nov.
3. Physorhynchus coprologus, sp. nov.
4. Trombidium grandissimum.

Memoirs of the Asiatic Society of Bengal.

1905-1906.

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

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AMULETS AS AGENTS IN THE PREVENTION OF DISEASE IN BENGAL.

COMPILED UNDER THE SUPERINTENDENCE OF

A. N. MOBERLY, I.C.S.

Superintendent of Ethnography in Bengal.

Smithsonian Institution,
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Amulets as Agents in the Prevention of Disease in Bengal.

Compiled under the superintendence of A. N. Moberly, I.C.S., *Superintendent of Ethnography, Bengal.*

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In a country, in which the science of medicine is in a primitive stage and in which sanitation is practically non-existent, it is only natural that a belief in the existence of a countless host of evil spirits and an array of malignant godlings, whose pleasure it is to bring disease and misfortune upon mankind, unless they are studiously circumvented and propitiated, should be well-nigh universal. Some maladies, such as hysteria, are directly ascribed to possession; and others, such as cholera and smallpox, are regarded as visitations of the gods. The masses are inclined to place far greater faith in the efficacy of charms and sacrifices than in the treatment of the Kavirāj and the Hākīm; and a large class of exorcists and religious mendicants, Ojhās and Sannyāsīs, Ganaks and Faqīrs, is ready at hand to foster the superstitions from which it derives a living.

The belief in the power of amulets to secure for the wearer not only immunity from or the cure of every kind of disease, but also almost every object that the heart of man can desire, is so widespread that it may be said to be universal. It is reported that their use is unknown among the wilder Kols of the Rānchī district; and that Christians, Wahābis, Brāhmos, and certain Hindu sects, such as the Kabirpanthis and Seonārāyanis do not place much faith in them. Hindus who have renounced the world do not wear amulets, because they are intended for the protection of the body and not to promote the welfare of the soul, and their use by such Hindu widows as cannot marry again, and who have little to hope for in this life, is not common. The superstition is one which dies hard, and amulets are freely worn even by persons who have received the most liberal Western education. Doctors of medicine, who of all people might be expected to know the limitations of such charms, have been known to wear Tāntrik amulets throughout their

lives. Others, impressed by cases in which cures have apparently been wrought, try to account for the efficacy of amulets by theories of magnetism or electric currents induced by the combinations of various herbs with the metals of the cases in which they are contained. Others again, though sceptical themselves, are unable to overcome the conservatism of their womenfolk, which exerts all its influence on the side of superstition, or argue that, although little good may arise from the wearing of amulets, no harm can come of it. The use of amulets is not forbidden either to Hindus or to Muhammadans, though, in the case of the latter, it should be restricted to those which contain texts from the Qurān or the sayings of saints. In practice this limit is not infrequently overstepped, but the most superstitious observances are confined to the Hindus. In its origin the custom of wearing amulets appears to be common both to the Aryan and the Semitic races. Both Hindus and Muhammadans possess a considerable literature on the subject, and there seems to be no reason to believe that either borrowed it from the other. Among the Muhammadans the practice appears to be very ancient, whilst among the Hindus, though it may in the first instance have been derived from the aborigines, it was recognised in and received great impetus from the Tāntrik works, on which modern observances are largely based.

The objects for which amulets are most commonly worn are to ward off or cure diseases, and to protect the wearer from the power of the evil eye, from the effects of witchcraft,[1] from the attacks of evil spirits,[2] and from the influence of malignant planets. Others are worn for general good luck, for freedom from bodily danger, and for protection against hydrophobia, snakebite, robbers and fires. Others again are worn for special objects,—to inspire love, to regain the affections of an inattentive husband, for reunion with absent friends, to prevail against enemies, to win at dice, to pass examinations, to get employment, to gain the favour of masters and superiors, and to bring others under subjection, to obtain children, for timely and safe delivery, or for success in law suits or in any difficult task. The object need not necessarily be good ; amulets are worn to aid in seduction, and by thieves and other criminals to secure immunity from detection and punishment. Amulets worn for protection against diseases or for special purposes may be removed a month or two after cure or on the realisation of the desire. The others are worn permanently, and it is believed that if an enemy were to succeed in removing them, evil would befall the owner.

Amulets are known by various names, such as Tâwiz (Bengal and Bihār), Mādūlī, Kavac, Jap, Paici, Baisut (Bengal), Jantra (Bihār), Demuria or Daunria (Orissa) and many others. The terms are used loosely, and, although each belongs in its strict sense to a more or less well-defined group of amulets, it may in some places be applied to amulets in general, without reference either to their contents, or to the classes by whom they are used. The term Tâwīz is an Arabic word which means "protection." Strictly it denotes only those amulets which contain passages from the

Tâwīz.

[1] Wizards are believed to have the power of transferring a person's life to a bird or beast so that he will suffer pleasure, pain, or death simultaneously with it. Amulets containing *mantras* are worn to render this power ineffectual.

[2] As for example, among many other instances, when night-soil and the bones of cows are mysteriously found on the roof in the morning, or houses are set on fire by some mysterious and unaccountable agency.

Qurān, sayings and prayers of the prophets and saints, or hieroglyphics consisting of the letters with which chapters of the Qurān commence or their numerical values (*naqsh*). These last are more akin to the Hindu formulæ, and are supposed to gain in efficacy if they are written on particular dates—on a Friday (the last Friday in Ramāzān is specially auspicious), or in the bright fortnight of the lunar month. The charms are prescribed by a Mullā or a Faqīr, who should prepare himself for the practice of exorcism by fasting from sunrise to sunset for forty days, and should subsist only on bread, milk and fruit. He must speak to no one during this period and sleep as little as possible. When sleep is absolutely necessary he must lie on a clean mat spread on the floor. No animals and no other person, not even one of his own family, may enter his room, which must be kept scrupulously clean, and purified by burning sandal-wood and incense, and by scattering perfumes. The strictest attention must be paid to personal cleanliness, and, besides performing the prescribed ablutions, he must bathe two or three times a day. If he practices exorcism without the observance of these rules, he is liable to incur the wrath of God.

The texts are usually written with red ink mixed with saffron, musk, rose-water or spring-water, or with *Shīrāki Siyāhī*, made of burnt rice, on paper, *Bhūrja Ptara* (the bark of *Betula Bhurja*) or palm leaves. Before he begins to write, the exorcist must perform ablutions and sometimes offer preliminary prayers. When finished, the paper is consecrated with Fātiha, the opening chapter of the Qurān, Qul (the chapter in which the prophet is ordered to say that there is one God), and Darūd (the sentence used by Muhammadans in blessing the prophet). Each of these must be read an odd number of times, not less than three or more than eleven. The writing is then put in a metal case, which may be of gold,[1] silver, copper, iron or a mixture of several metals, or is wrapped in seven fold of cloth with an outer covering of wax-cloth. The whole is sometimes further protected by a final case of black or red material. From the nature of its contents the case is usually rectangular, though the exact shape is optional with the wearer. A text or a representation of a flower is sometimes engraved upon it. It is usually worn on the right arm or suspended from the neck by a thread dyed in indigo. A particular form, known as Jaushan, which is especially efficacious in the preservation of bodily health, and in averting the evil eye, must, however, be cylindrical in form and worn on the right arm. A Haft haikal or Hamāil is a crescent-shaped amulet worn round the neck for the same purpose. Texts, Hadīs (sayings of the prophets), or the name of God, alone or combined with those of the prophets (Adam, Noah, Abraham, etc.), may be engraved on jewels set in gold, or on stone or metal, and are then known as Doa.[2] Such a jewel is often worn on the finger, where it frequently catches the eye of the wearer, as it is believed that the power of an amulet is greatly enhanced when he is looking at it. A text beginning with the word "Nādalī" gives this name to a particular kind of amulet much worn by the Shekhs. The person who wears a Taẓwīz must observe the strictest cleanlinesss. No actual restrictions are placed on diet, but no food may be taken until the wearer has bathed,

1 The District Magistrate of Gaya reports that the Muhammadans regard gold as impure, and never use it as a case for Tawīz. This is not borne out by reports from other districts.

2 Doa means a prayer for someone's good or ill. Besides denoting this particular kind of amulet the term is applied to texts from the Quran written on paper and placed in cases.

or changed the clothes worn during the night. The amulet contains holy words, and must therefore be put aside during the performance of any impure act, and ablutions must be performed before it is resumed. The Tạwīz enumerated above are sometimes known as Ạlawī Tạwīz, to distinguish them from Sifli Tạwīz, or amulets containing *mantras*, the use of which, although they are of Hindu origin, is not unknown among the lower classes of Muhammadans. In Bihār, the name Tạwīz is applied generally to every amulet worn by a Muhammadan, as opposed to Yantra, the term used for charms carried by Hindus. In Eastern Bengal, where the majority of the Muhammadans are descended from converted Hindus, who retained their superstitions when tney changed their religion, they use amulets containing herbs and roots, more commonly than in other parts of the Province; and the terms Tạwīz and Māduli are used indifferently for any kind of amulet, the Tạwīz proper being distinguished by the name Tumār. This practice is not approved by physicians and Mullās, as it is claimed that every disease can be cured by amulets, which contain the name of God. It is, however, encouraged by the Faqīrs who trade upon popular superstitions. Another superstitious practice, which is probably of Hindu origin, is to wash pieces of metal, plates or leaves, on which passages from the Holy books have been engraved or written, and, after doing so, to drink the water. Pieces of paper on which texts have been written by the Mullās are sometimes swallowed. The use of Muhammadan Tạwīz is not infrequent among the lower classes of Hindus, who are led by superstition to adopt any form of amulet from which there is the faintest hope of benefit.

Kavac.

The Kavac is a Hindu amulet corresponding to the Muhammadan Tạwīz. The word, which is of Sanskrit origin, denotes "armour." It is said to have been first applied to amulets by Tāntrik ascetics, who wore them as a protection against the evils to which they were exposed when performing the Tāntrik Yoga. As in the case of the Tạwīz, the term Kavac is in some places applied to amulets generally. In its strict sense, however, it is confined to amulets containing *mantras*, mathematical figures, or hieroglyphics by which the aid of some deity or planet is invoked. A small image is sometimes added or substituted. These amulets should be worn by Hindus only. The lowest castes, such as Hāṛi, Dom, Caṇḍāl and Bāgdi, who are not entitled to benefit by the Śāstras, are not permitted to wear amulets which contain Śāstrik *mantras*.

The Śāstrik *mantras* are usually written by Brāhmans, Gurus or priests. Others may be written by Brāhmans, Sannyāsīs, Faqīrs, Ganaks or Acāryyas or exorcists. They are usually written on *Bhurja Patra*, of which four kinds are distinguished—white for Brāhmans, light brown for Kṣattriyas, a darker shade for Vaiśyas, and almost black for Śūdras. If *Bhurja Patra* cannot be obtained, leaves of the plantain, *pipal* (*Ficus Religiosa*), *bel* (*Aegle Marmelos*), *tulsi* (*Ocymum Sanctum*), or *banyan* (*Ficus Indica*) or paper may be used, but this is not common. The writer must be in a state of purity, and must live on simple fare or he will be liable to severe punishment in the form of some incurable disease. The pens used are made of porcupine-quills,[1] reeds, thorns or twigs of

[1] It must be observed that where lists are given of articles used for various purposes it is not meant to imply that all those included are in use in every part of the Province. It is quite impossible to specify from which districts any given name has been reported, though attempts have been made to distinguish, as far as possible, where the more important matters are concerned.

bel or promegranate. The ink may be black, but is usually red and consists of *candan* (sandal), *rakta candan* (red sandal), *kes'ar* (saffron), blood (especially that of a white pigeon), musk, turmeric, vermilion, lac-dye, *gorocanā* (cow's bile) or *aṣṭa gandha*, a compound of eight ingredients (sandal, saffron, turmeric, *gaolocan*—a preparation of cow's urine—red sandal, aloes, camphor and musk). The *mantra* is sometimes combined with mathematical figures, such as a circle in a circle, a square in a square or circle, or a triangle in a triangle, the *mantra* being written in the central space. A specimen of such a charm is given below. In this case the syllable om̃, which represents the Hindu trinity, is written in the centre of two triangles, about which a circle is described, and the remaining spaces each contain one letter

of the patient's name. This *mantra*, combined with a *tulsi* root, in a case of *aṣṭadhātu* [1] is a sovereign protection against witchcraft. In fever cases the figure of a demon is drawn and the word Mahā Nṛsiṁha is written across the body. The *Bhurja Patra* is then folded seven times before insertion into its case of *aṣṭadhātu*. The following are specimens of *mantras* actually used :—

(i) नमः हुं कालिकायै नमः ॥
Used to give courage.

(ii) नमः जं रं|वं लं स्वाहा ॥
Durgā's *mantra*, used against fever.

(iii) नमः कं खं गं इत्यादि ॥ 'चतुर्दन्तं रातात्तर अनुस्वार युक्तं लिखितव्यं ॥'
Hanumān's *mantra* (or *Bajaranga*), for the fulfilment of a desire.

(iv) सार मान वरा रोहा नगे भाग मनाहिया ।
याहि ना मग भागेन हारो रावण मारसा ॥
Durga's *mantra*, for the cure of sores on young children.

The Kavac are known by many names, which have reference either to the deity whose power is invoked, or to the object with which they are worn. Thus the Rām Kavac, which must be regularly worshipped with flowers and sandal-water, is worn in a gold case, usually by females, for protection against evil spirits, who cannot face the name of Rām ; Rakṣā Kavac is worn for the same purpose, but the name here applies to the object with which it is worn ; Bamśa Kavac is worn in a gold case, with the object of

[1] *Aṣṭadhātu* is a combination of the eight metals—gold, silver, copper, iron, tin, lead, zinc, and mercury—which is supposed to possess peculiar curative power. Combinations of three or five metals are also used for amulet cases.

securing long life and prosperity for the wearer's offspring ; Akṣaya Kavac in copper, to prevent miscarriage ; Navagraha Kavac in gold, for the propitiation of the planets, who are the origin of all the good and evil in the world ; Maheśvarī Kavac in gold, to cure serious illness ; Bāyu Kavac, containing the *mantra* of the god Paban or Bāyu, in *aṣṭadhātu*, against insanity or hysteria : Mṛtabatsā[1] Kavac, in copper, to avert the calamity known by that name : Śiva Kavac, for the destruction of enemies and the increase of knowledge ; Sītā Kavac, for affection ; Durgā Kavac, for success in the face of difficulties, against evil spirits, and for wealth ; Hanumān Kavac, for the cure of gout and rheumatism ; Gaṇeśa Kavac, for wisdom, long life, success, wealth, destruction of enemies or the attainment of a particular object ; Nṛsiṁha Kavac, against *mṛta-batsā*, and for safety by land and water ; Viṣṇu Kavac, for regard ; Sūryya Kavac, for the cure of disease, and protection against danger and evil spirits ; Gopāl Kavac, for salvation ; Argalā Kavac, for the mitigation of sin ; Sarasvatī Kavac, for learning ; Lakṣmī Kavac, for wealth ; Kālī Kavac, against premature death. A Kavac, given to a person by his Guru, and containing his special *mantra*, is known as an Iṣṭa Kavac. It is encased in lead for the fulfilment of a special object, but, more frequently, in gold or copper, to ensure the efficacy of prayers, and is adored daily.

The metal of the case varies, and is usually prescribed by the giver of the charm. Brass, however, is very rarely used. Sometimes the *mantras* are wrapped in cloth or wax-cloth, but when this is done the outer covering must always be red or of a dark colour. In some cases the *mantras* are inscribed on plates of stone, metal or wood. The metal plate may be rolled into a hollow cylinder and attached to the person by a thread passed through it. A zinc amulet of this kind is often worn by women who are liable to miscarriage and to produce still-born children. If the child is safely born, the amulet is transferred to its neck and remains there until worn out. The deity who presides over the amulet is often represented on the case. This is specially the case with Kālī or Bhagvatī (who is sometimes represented by a lion), Hanumān and Gaṇeśa. Kālī is particularly powerful in averting the effects of witchcraft. Gaṇeśa is the emblem of peace and wisdom and confers blessings upon his votaries ; while the name of Hanumān, the favourite of Rām, will drive away evil spirits. These spirits are always hovering round to try and find some flaw in the materials, contents, design or consecration of the amulet, but dare not approach it when it is thus guarded. The figure of Hanumān is very commonly found on amulets given by the Rāmāyat Sannyāsīs, who adore him as Mahābīr before beginning any task. This practice is more prevalent in Bihār and Orissa than in Bengal, where amulets are only ornamented with floral designs, if at all. The shape of the Kavac is sometimes prescribed and sometimes left to individual fancy. From the nature of its contents it is usually rectangular, but it is often made to correspond with the form of the symbol of the presiding deity or planet ; for example the Sūryya Kavac is round, and the Vṛhaspati Kavac is shaped like a lotus flower. The *mantra* is usually consecrated and placed in its case by the writer. The deity whose assistance is invoked is worshipped, and the consecration (*Puraś-caraṇ*)

[1] *Mṛta-batsā* is the name given to the misfortune of a woman whose children die in the womb or within a short time after birth.

is often accompanied by the performance of *hom* or *ahuti* (offering of *ghi* to fire) and sometimes by sacrifices.

A Kavac is usually worn on the upper or pure half of the body, on the arm, suspended round the neck, or attached to the hair. It is sometimes put on by the giver and sometimes before the image of the god or goddess whose aid is invoked, and to whom a *pūjā* is vowed if the object should be attained. It must sometimes be put on for the first time on a special day, such as a new or full-moon day, or at a particular time, as, for instance, after a bath or a change of clothes. Should it be brought by a third person, he must not expectorate or satisfy any call of nature whilst carrying it. Strict purity on the part of the wearer, when an adult, is an essential condition to the efficacy of the amulet, though the restrictions vary in different cases. Some or all of the following rules are usually observed :—meat, fish, onions, plantains, anything sweet or sour, intoxicating liquor, and strongly-scented spices are forbidden. The wearer must not take food from anyone outside his family, or sleep or eat in another's house. He must not touch a low-caste man, a widow, a woman afflicted with *mṛta-batsā* or during menstruation[1] or a dead body.[2] He must not come into contact with the smoke of a funeral pyre, or of the fire which is kept burning at the door of a room in which a woman has been confined. He must refrain from sexual intercourse. He must take off the amulet when performing any impure act,[3] and must change his clothes before resuming it. He must sprinkle cowdung and water when any unclean thing is met with, and, should he accidentally come in contact with anything impure, he must touch Ganges water. Some amulets become impure, and lose their efficacy if a death occurs in the family or if anything unclean is touched. Others are believed to disappear mysteriously if the instructions are neglected. The god whose Kavac is worn must be worshipped every day. The amulet itself is sometimes washed daily and the washings drunk, preferably after bathing and before food is taken. Or it is worshipped at stated intervals. The class of amulets known in Bihār as Anant, which are worn just above the right elbow, so as to always catch the eye, are worshipped at the Anant Pūjā on 14th Bhādra.

Besides its ordinary general use denoting any kind of amulet worn by Hindus, the term Yantra, which literally means "a machine," is specially applied to a Kavac of a specified metal, shape, size and weight, on which are engraved certain lines or figures. It is worn to avert the influence of particular planets.

There are several kinds of solid amulets. Tabak or Takti are ornaments, usually of gold, which bear the names or figures of Rām, Śiva, Kāli, Gaṇeśa or Kṛṣṇa. Padak are made to represent the footprints of gods, and are flat medals, roughly square, round or oval, with indentations at the sides to correspond with the toes. These two varieties are worn only by children, round whose necks they are hung. Pithia and Chandramā are made of silver or gold. Upon the former the figure of a man is engraved ; the latter

---

[1] Women who wear amulets for female diseases are often enjoined to take them off at the times of menstruation and confinement. In the latter case the charms are frequently transferred to the child after the ceremony of purification has been performed.

[2] In the Chittagong Hill Tracts, a person may not, whilst wearing an amulet, go under the *mācān* floor of a house in which there has been a birth or a death. If he does so, the efficacy of the amulet is supposed to cease.

[3] Amulets worn for fistula and piles are, however, not removed when answering a call of nature.

is crescent shaped, and is worn by persons who are affected by the conjunction of the moon with certain stars.

Rings of various substances are worn on the wrists (Bālā or Kārā), fingers and toes (Anguti), arms or legs (Tāgā), and are sometimes tied round the neck or waist or in the hair. An iron ring, consecrated by contact with an image of Kālī, and worn on the wrist, is a protection against lunacy or enlargement of the liver. An arm ring of iron or copper is worn against rheumatism. Closely fitting Tāgā of *aṣṭadhātu* cure leg diseases if fastened round the ankle. A brass Tāgā is worn on the arm as a cure for acidity.[1] The idea seems to be to check the flow of impure blood past the amulet. Thus a consecrated cowry is sometimes tied round a limb with human hair to prevent the spread of a disease which has attacked the extremities. The Tāgā may merely consist of metallic wire or a piece of consecrated thread. A silver ring worn on the toe is regarded as a protection against tumours and snake-bite, and an iron ring on the thumb or toe as a cure for hydrocele. A ring containing mercury is worn on the finger to avert disease and to maintain the general vitality of the system. A ring made of the scales of the Pangolin, and known as Bajra Kapta, is worn on a finger of the left hand, as a protection against witchcraft and the evil eye, and for the cure of piles. Earrings are used in cases of headache, brain or eye diseases or toothache.

Pice and other coins are often tied to the person as charms. For protection on a journey or for the cure of an illness, Muhammadans sometimes wear a silver or copper coin attached to the right arm by a piece of cloth, which is usually red. This form of charm is known as Imām Zāmin. When the object has been attained the coin is removed and given to a beggar. As the name indicates, the coin is really pledged to a charitable purpose, and is devoted to that purpose when the Deity has redeemed it by the performance of what is desired of him.

Mādulī.

There remains the very large and miscellaneous class of amulets which contain substances other than sacred words or symbols. These are usually contained, for convenience sake, in cylindrical or drum-shaped cases which give to these charms the generic names of Mādulī (Bengal), Damuria or Daunria (Orissa), and, occasionally, Dholuā (Bihār). All these terms either mean, or are derived from words which mean, "Drum."[2] These amulets may be given by anyone; caste restrictions do not affect them; and a Brāhman may wear a Mādulī prescribed by a man of the lowest caste. They form the stock-in-trade of a large number of Sannyāsīs, Yogīs, Paṇḍās, exorcists, mendicants, and quacks. Sometimes a person suffering from a disease dreams of a drug by which he may be cured, and, if he should recover, people similarly afflicted have recourse to him or his descendants for the remedy. The way in which some of these drugs are brought into use may be illustrated by the following examples reported from Faridpur:—

A child was suffering from asthma and other complaints. He awoke from sleep one afternoon with a piece of the root of some plant in his hand and showed it, as children

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[1] Persons wearing brass Tāgā must use brass utensils only.

[2] It has been suggested that Daunria is derived from Dora, "a thread," but on the analogy of the corresponding terms used elsewhere, there seems little doubt that it is derived from the word Damru, "a small drum."

do, to his parents. The latter regarded it as a remedy sent by the gods, put it in a case, and hung it round his neck, with the result that he was cured.

A woman, suffering from hysteria, dreamed of a remedy and directed her husband to bring a plant from a certain place at some distance, to which she could not go herself, as she was by custom forbidden to appear in public. The root was encased and attached to her left arm and the disease left her.

A Calcutta student was sent home by medical advice, as he had contracted a bad form of hernia. Shortly afterwards he told his parents that their tutelary goddess Kālī had appeared to him in a dream and indicated the cure. He accordingly uprooted a certain plant, which was growing near the temple of Kālī, and was completely cured by hanging it round his neck. Other cures were effected by pieces of the same plant, but he forgot what plant he had used, and no further supply could be obtained.

The substances placed in the cases are of a most miscellaneous description and may be animal, vegetable, or mineral in origin. To give a complete list is out of the question. Roots of various plants are probably the most common, but flowers and leaves are also used. Iron is a sovereign protection against evil spirits[1] and is frequently used, either as a case, or in specially auspicious forms, such as a piece of the edge of a ploughshare, the first nail driven into a boat, or *jālkāṁṭhī* (an iron weight fastened to a fishing net). Things offered to gods, such as *mahā-prasād* (cooked rice offered to Jagannāth), *bel* and *tulsi* leaves and flowers,[2] and the ashes of incense burned in temples are supplied by the priests of the various shrines. Sannyāsīs and Yogīs provide ashes of the wood and incense burned before them, pieces of their hair, nails and rags, or even the dirt scraped from their bodies. Dust from certain celebrated shrines, which is regarded as having been trodden by 100,000 Brāhmans, is put in a gold case. The water in which such an amulet has been washed, if drunk, is believed to give long life. Among the more fantastic substances to be found in amulets may be mentioned earth from a grave-yard, snakes' heads, lizards, worms, boars' tusks, tigers' claws, tails, teeth or whiskers (worn by children round the waist as a protection against the evil eye), bears' fur, bats' bones, crocodiles' teeth, jackals' ears, peacocks' tail-feathers, owls' tongues cut on a Tuesday or Saturday, nests and eggs of kites (*S'aṅkar-cil*), the dead body of a sparrow buried for a week at cross roads near which a light has been burned each evening, shells and pearls. The greatest mystery is observed as to the manner in which the various substances are collected, and the contents of the cases are kept a profound secret.[3] The efficacy of the amulet depends to a great extent upon the power of the giver to influence evil spirits. The wearer must not know the contents, unless of course they have been specially revealed to him in a dream, and it is believed that if he should become aware of them the virtue of the amulet will be at once destroyed.

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1 Thus an iron nail or a knife is placed under the sick bed; an iron key is tied to the corner of the cloth of the man who performs the Agnikriyā; and an iron nail is driven into the ground at the exact spot on which a person has died to prevent his spirit returning to haunt the house.

2 Such amulets are sometimes called Puṣpa (flowers).

3 The Baigas, Dewāns, Sāpuṛiās and Sokhās of Chotā Nāgpur do not appear to observe the same secrecy as their more enlightened brethren, but collect their drugs openly, and in the day-time. This is possibly because their power is more absolute, or, perhaps, because the jungles are not free from danger at night.

Restrictions of diet and rules of life are prescribed in each case, and the metal in which the charms are enclosed is also an important factor. The non-observance of any of these forms will prevent the amulet from proving efficacious. The reason of all this mystery and secrecy is clear. Cure by means of amulets is obviously a form of faith-healing, and would be very unlikely to produce the results, which undoubtedly are produced in many cases, if the wearer knew that his charm contained only the most common substances. The giver's occupation too would be gone, if everyone could procure the remedies for himself. And the prescription of a number of minute observances allow of a retreat in case of failure, for it is never difficult to show that some essential has been omitted.

In order that they may have full potency, plants must be gathered at an auspicious time on an auspicious day. This varies in each case, and it is believed that if a root is not secured in the proper manner at the proper moment, it will fail to achieve the purpose for which it is used. The usual time is either in the middle of the night, or at earliest dawn, before the crows have alighted on the earth. The favourite days of the week are Tuesday, Saturday (the two evil days), Sunday, and, more rarely, Thursday. The Amābasyā (darkest) night is the favourite night of the month, and the Kārttik Amābasyā is the most auspicious of all. The new moon is usually preferred to the full moon, though certain herbs must be gathered on full-moon nights. The most auspicious stars are Puṣyā and S'atabhiṣā. Some herbs must be gathered during an eclipse.[1] Other specially favourable days are the 13th day of the moon, the Āśvin and Caitra Daśaharā, any day during the Durgā Pūjā, Saṁkrānti days, especially the Caitra Saṁkrānti, and the days of the Caṛak and Kālī Pūjās.

In Chotā Nāgpur and Orissa it is customary to place an offering of milk, rice, betel, turmeric and a pice before the plant which is to be uprooted, on the previous night, as an invitation (*nevatā*) to the latent power within it. Sometimes incense is burned in a *ghī*-fed lamp, and a cock is offered when the plant is plucked. The person who uproots the plant (usually a woman), must be pure and chaste, must sometimes have fasted the previous day, and is often completely marked. Nudity is regarded as the purest state, as cloth may be defiled by the touch of anything impure. This custom is, however, more frequent among Tāntriks than among Vediks. In other cases the plant is uprooted before the person who does so has bathed or eased himself. Plants collected for amulets to be worn for the attainment of evil objects, such as seduction, are usually plucked by a woman, who bathes and uproots them with hair unbound and dripping clothes. Sometimes plants must be uprooted at one pull. Sometimes the gatherer walks round them three times and kicks them before uprooting them. Sometimes he must hold his breath and look behind him or face in a certain direction. Sometimes they must be gathered near the temple of a particular god or on a burial-ground or at a burning-ghāṭ. The night of the Kālī Pūjā is especially favourable for the collection of skulls and herbs from such places. A preliminary ritual is often performed to

[1] In the Sāntāl Parganās Kāmārs are in the habit of hammering their iron into elongated slabs during an eclipse. These are afterwards converted into sickles or amulet cases. The sickles are applied red-hot to the skin for the cure of head or stomach-ache.

protect the gatherer from the evil spirits which haunt them. *Mantras* are sometimes repeated at the burning-ghāṭ,—the spot on which a Telī has been recently cremated is selected if possible,—or the god, whose aid is invoked, is worshipped there by the light of the new moon.

One or two examples may be given of the special manner in which certain objects must be procured for certain purposes :—

If a stinging nettle and an Apāṇg (*Achyranthus atternifolia*) are growing together, their roots, when gathered at the time of a solar eclipse, bring good luck, wealth and fame. A Karabī root (*Nerium odorum*), pulled on the night of the Manasā Pūjā, whilst the breath is held, is a great protection against snake-bite. Its efficacy lasts for a year, after which a fresh root must be substituted. It may be similarly gathered on any Tuesday or Saturday, but in that case it must be replaced after six months. Fragments of the grain measure or *sindur* box, which is usually taken to the burning-ghāṭ with the body of a Caṇḍal woman who has died on a Tuesday or Saturday during the lifetime of her husband, must be collected at midnight, during the new moon, in a state of nudity.

The contents of the amulet may be put into the case by the person who prescribes them or by a particular person at a particular time. They are sometimes made over to a Sonār in a piece of paper, and it is said that the craftsman never attempts to discover its contents. They may be consecrated by being dipped into Paṛcāmta (a mixture of milk, curds, *ghī*, honey and *guṛ*), which has been sanctified by *mantras*, or formulæ may be recited over them. Consecration is, however, not always regarded as essential. The case may be made of any metal or combination of metals. Copper, silver, gold and *aṣṭadhātu* are, perhaps, those most frequently employed. The metal is varied by the giver according to the contents and the object to be attained. Sometimes the case must be made on a particular day, such as a Tuesday or Sunday. It is usually drum-shaped. It may taper to the ends or have a uniform section, either circular, hexagonal or octagonal, throughout. The outside may be plain or ornamented. In the Chittagong Hill Tracts frogs, monkeys and birds are represented on it. Representations of the gods are unusual on this class of amulets. An exception, however, in Palāmau, is the Sirgana, a small round amulet containing bears' fur, or a tiger's claw or whiskers. It is made of brass or silver, is worn on the neck, usually by children, for general protection against evil, and invariably bears the figure of Kālī or Devī-Māī.

When the case is not drum-shaped the amulet is given another name ; for example, charms enclosed in cases shaped like betel leaves or tigers' claws are known as Pānapatra or Bāghnakhi. Two forms of amulets are worn by the wealthier Sāntāls.[1] One is in the form of two cones joined at the base. The other resembles the fruit of the *Kendri* creeper (*Zehneria umbellata*) and is known as Kendri Mādulī. The cases, which are of gold, silver, or brass, are ornamented with various designs. The contents are shellac and other gums. These amulets are always worn on the neck. A large square gold case containing a collection of drugs or, occasionally, *mantras* is known in Orissa as Sambhrita.

1 The majority of Sāntāls use a drum-shaped amulet of iron or copper which contains medicinal herbs, and is worn on the neck, waist, upper arm, or more rarely, on the ankle.

Sometimes no metal case is used but the charm is covered with a yellow rag or tightly bound with indigo coloured thread spun by a virgin. This form is used both by Hindus and Muhammadans and may be consecrated either by texts from the Qurān or by *mantras*. It is known as Jap in Bengal and as Guṭika in Orissa. A somewhat similar form, peculiar to the Chittagong Hill Tracts, which, contains *mantras* written on palm leaves, is known as Laphua [1] and is believed to have been introduced from Burma.

Any of the rules and restrictions prescribed for the wearing of Kavac may be applied equally to Māḍulī. There are, however, additional rules which may be prescribed for the latter. They must sometimes be first put on a Tuesday or Saturday, the first thing in the morning before ablutions have been performed ; or at an altar or temple, whilst the owner faces northwards[2] with his clothes still wet and utters a prayer. Hindus are often directed to fast on the eleventh day of the moon. In the case of women, a fast may be prescribed on Mondays, after which *habiṣya anna* (boiled rice and *ghī*) must be eaten at sunset. Or the amulet is purified every eighth day by being passed through the smoke of *dhūp* incense. Purity is, as usual, essential, as dirty people are held to be specially liable to the attacks of evil spirits. The restrictions of diet are sometimes similar to those which would be ordered by a doctor ; for example, when the use of tobacco is forbidden in the case of lung diseases. In other cases they are exactly the reverse, as, for instance, when a person suffering from fever is allowed to bathe or eat any kind of food or when *muṛi* (parched rice) is given in case of diarrhœa and dysentery. These rules are discretionary with the giver of the amulet, and entirely different restrictions may be imposed with two different amulets for the same disease. For example, in the case of hysteria, *śāk*, acids, and certain fish are forbidden with one amulet, whilst with another the only rules are that the Māḍulī must never be allowed to touch the ground, or the patient her mother.

Māḍulī and the allied amulets, which contain miscellaneous objects, unlike those which contain only sacred writings, may be worn on any part of the body, though gold amulets are not worn below the waist. They are generally attached by red or blue thread, which should have been spun by an unmarried girl to give the best results, but sometimes with a yellow cotton thread, a gold chain, gold or copper wire or a silk thread of any colour. For the cure of illnesses they are usually worn as near as possible to the seat of the disease. Thus they are worn round the waist for bowel complaints, for urinary and other diseases affecting the parts below the navel, or to prevent miscarriage; on the thigh or round the loins to hasten delivery ; round the ankle for elephantiasis or gout; on the chest for asthma and diseases affecting the heart or lungs ; on the head, tied to the hair or the *pagṛī*, or stuck in the ear, for brain and eye diseases, or for toothache. For constitutional diseases, for general protection, and for special objects, they are, as a rule, worn round the neck or on the arm Sometimes several Māḍulī are strung together and worn as a necklace. Men usually wear them on the right arm and women on the left. Women often wear amulets for diseases connected with childbirth in the hair. Children generally have them tied round the neck or waist, or, less often, round the arm. For an

[1] The term is used by the Maghs to denote every kind of amulet.

[2] North and east are regarded as lucky and pure.

amulet to have an effect on any person, so that he may be favourably disposed towards the wearer, it must be worn in a conspicuous place, in order that it may catch his eye. Amulets are sometimes hung round the necks of animals which it is desired to protect. The following are some of the substances placed in amulets for specific objects:—

Against the evil eye, leopard's tongue, peacock's feather, tiger's tail, leaves of *Coradahana*,[1] or *Circira* root (*Achyranthus aspera*); for headache, *Adhkapāli* (a kind of betelnut); against witchcraft, the bark of the *Guā Bāblā* (*Acacia farusiensis*), and Nāgdonā leaf (*Artemisia vulgaris*); for the conciliation of *mahājans*, red sandal-wood, cow's bile and *keśarī* flower (*Eclipta alba*); for love, a *mantra* and Lajaunī (*Mimosa pudica*); for asthma, the root of *Kuśa* grass (*Poa cynosuroides*) or the larynx of an otter; against evil spirits, *mantras* and rotten wood from a tree struck by lightning; for dropsy, *khorai* root (*Oxystelma esculantum*); for lumbago, tigers' claws, crocodiles' teeth, or a kind of shell called *Navi Saṅkha*; for leprosy, S'ani Kavac, or *arka* root (*Callotropis gigantea*); for lunacy, *Palāñ* root (*Butea frondosa*); for success, a jackal's ear, or a twig gathered from the eastern part of a black *tulsi* plant. Further details will be given later, when specific diseases are dealt with. It is first necessary, however, to make a brief reference to the different kinds of evil spirits, and the methods of exorcism which play so large a part in the cure of disease.

Evil Spirits.

Persons who die a violent or unnatural death or without initiation become evil spirits or Bhūt. A Brāhman who has died a violent death, or before he has been invested with the sacred thread, becomes a specially powerful spirit known as Brahma Daitya. Women who have died in childbirth become S'urail. Until the S'rāddha or Sapiṇḍī Karan ceremony has been performed, the spirits of the deceased roam about as Pret. Other types exist, but those enumerated above are the most usual forms. The term Bhūt is generic, and includes the others. The spirits usually live in trees, especially *banyan*, *pīpal* and *tāl* (*Borassus flabelliformis*) trees. They wander about seeking to do evil to mankind. They are most dangerous at early dawn, midday and dusk. Persons leading impure lives and children are particularly liable to their attacks. Male spirits have a special tendency to possess women, who are most exposed to this danger between the ages of 12 and 20.

Exorcists are known as Ojhā in Bihār, Rojā in Bengal, and Guṇī in Orissa. In former times Brāhmans performed this function, and many still bear the title Ojhā, but at the present day the exorcists are usually men of low caste and sometimes Muhammadans. Among the Sauria Pāhāṛiās the exorcists are known as Demno; among the tribes of Chotā Nāgpur as Sokhā. Exorcists frequently pretend to own spirits or Piśāc, which assist them in the performance of their duties. Sometimes the ceremony is exorcism pure and simple. The spirit is adjured to leave its victim. To hasten its departure, the patient is brushed with *kuśa* grass or a *nim* (*Azadirachta indica*) branch, or is rubbed with consecrated *ghī* or mustard-oil; holy water is given him to drink, and he is, in many cases, severely beaten with a shoe, *mantras* being recited all the time. The spirit may depart after such treatment. If obstinate, *pūjās* must be performed and a Piśāc called in

[1] A sweet-scented leaf held sacred because it was stolen by the god Jagannāth.

to subdue it. When it leaves the patient, it is made to give its name, and to say why it attacked him. It is often made to perform some task in token of subjection. It may then be allowed to escape, when it takes refuge in a haunted tree, and is afterwards secured by the exorcist with further ceremonies, whilst an amulet is given to the patient to prevent its return. In Chotā Nāgpur the Sokhā induces the spirit by invocations to pass from the body of the patient into a cotton wick, which is immediately put into an iron tube, already closed at one end, and sealed up. As spirits cannot pass iron, the Bhūt is thus imprisoned. Sometimes the spirit is transferred to other persons. The exorcist, after performing certain ceremonies at midnight, goes out and calls to the neighbours. If anyone answers, the spirit leaves the patient and enters into him. In other cases certain articles are buried, and the disease is transferred to any person who walks over them. Sometimes the exorcist claims to have received inspiration in dreams. He occasionally prepares a meal of milk, plantains, and other food in a dark room in the patient's house. Strange noises are heard, and he gives out that the spirits are coming. His audience is terrified and leaves hurriedly, and he is then heard to address the spirits, who tell him what remedies are required. An exorcist sometimes pretends that a chronic disease is due to indigestion. The patient is made to lie on his back and a brass pot (presumably smeared with some irritant) is filled with medicines and placed on his stomach. After an hour or two the pot is removed and a swelling is found. The exorcist claims that some indigestible substance has been extracted.

The exorcist also works by divination, in order to ascertain who has bewitched the patient or what spirit has possessed him. Sometimes this information is obtained from the familiar spirits. Sometimes plantain leaves are placed in a row, to represent deities and spirits. The exorcist takes a *tulsi* leaf in his right hand, and placing both hands on a piece of stone mutters incantations until his hands move forward with the stone and touch one of the leaves. The power thus indicated is then worshipped for the cure of the disease.

Niskandha, who is represented as a headless man with the face depicted on the body, is worshipped in Jalpaiguri as a protection against evil spirits. Goats are sacrificed to him in large numbers under a *banyan* tree, which is shunned by the people and regarded as the home of all the devils.

In the Orissa Tributary States figures of Durgā and Ganeśa are painted on the door of every house in Bhādra. The *mantras* of Ghaṇṭā karṇa are written on a palm leaf, and recited, whilst the leaf, together with twenty-one shoots of *dūrbbā* grass (*Panicum dactylon*), is hung on the door. By this means the house is secured against the entry of evil spirits.

Another form of worship which has a fixed date assigned to it is the Hanchra or Ita Kumār Pūjā which is observed in Pabna and Bogra. It is performed in the last week of Phālgun, or sometimes throughout the month, in order that the votaries, who in this case are children, may be protected from measles and skin diseases. On the evening before the commencement of the *pūjā* a plum twig is stuck in the ground, and a circular platform of mud is built round it, on which a lighted lamp, fed with mustard-oil, is placed. It is worshipped every morning with offerings of wild flowers, whilst rhymes are recited. On the last day the children bathe early, and the deity is worshipped at the

ghāṭ by the *purohit* or by an elderly woman. Offerings of rice, plantains, and sweets are made, and distributed amongst the worshippers.

Epidemics.

As a rule, however, measures are only taken against illnesses and epidemics when they make their appearance. In the case of epidemics, precautions are observed when neighbouring villages are attacked, and further measures are taken when the disease has effected an entry. The most general and serious epidemics are cholera, smallpox, and plague. Many of the observances are common to all of them, but cholera and smallpox have their own presiding deities, and the measures taken to propitiate them accordingly vary with the disease. Plague is too recent a visitation to have been provided as yet with a separate godling and ritual. When any measures beyond those taken in the case of epidemics generally are required for it, the forms peculiar to cholera are usually observed.

Villages are protected from epidemics in Eastern Bengal by bámboo posts to which are attached earthen plates (*sarā*) or flags, which are sometimes consecrated with holy mustard-oil. Tāntrik *mantras* or texts from the Qurān are written with ink, or the blood of moles or bats, on the plates or on pieces of paper attached to the flags. Various substances tied in rags are sometimes added. The posts are planted at the four corners of the village, and sometimes on every path which leads to it. To protect a particular house, similar posts are planted at the corners or in front of the door. Earthen plates on which texts have been written are often hung at the door of the main room, or upon the wall of the house, or are buried before the threshold.

Except in Howrah, Hooghly and a few of the neighbouring districts, it is customary to place an old black earthen pot, usually containing ashes, whose outer side is streaked with lime and sometimes splashed with vermilion or ornamented with the figure of a man, together with an old broom and a torn shoe, on the path leading in the direction from which the disease is expected to come, beyond the village boundary and preferably at cross roads. The ceremony, which is known in many places as *grām bandhī* or "barricading the village," is sometimes performed at midnight. Similar pots are placed at the door of a house to protect it from the epidemic, or in a field to save the crop from damage. In such cases the pots are often placed upside down upon sticks, or the brooms are tied to the ends of bamboos planted in the ground. The idea seems to be that the godling or spirit will turn aside on meeting this unattractive group of articles and leave the town or village unmolested. In Orissa holes are dug outside the town or village and filled with rice or mustard-seed whilst *mantras* are uttered.

In Chotā Nāgpur recourse is had to the exorcist who fasts and recites *mantras*. When he has worked himself into a frenzy, he selects a root, of which a piece is given to each householder. The Kuṛmīs each eat their piece; the Goālās tie it to the thatch above the door; whilst the Tāmāṛās bury it before the threshold.

Houses may be further protected by bars of cow-dung placed across the approaches; or they are washed and camphor is scattered in the rooms. Sometimes an Ojhā, Faqīr or Mahati goes round the house three times repeating *mantras* or uttering the mystic syllable "Hish," and scattering consecrated dust or mustard-seed, after which some consecrated object is buried at the door. A similar method is practised for the

protection of the village, and the exorcist often works upon the imagination of his followers to such an extent that they believe that they see the godling running away disguised asa dog or tree.

Mantras, such as the *Nṛsiṁha mantra*, are written with red ink on *Bhūrja patra* of *pīpal* leaves and hung at the door, whilst mustard-oil is burned in a lamp fresh made of mud every evening in the family Thākurghar. Muhammadans hang looking-glasses in their houses, and affix slips of paper or pieces of wood to the doors. These bear texts from the Qurān, such as the Āqd-ul-kursī, the Sureh Taghaban, and the Arabic couplet invoking the aid of the five souls (Muhammad, Ali, Fatima, Hassan, and Hosain). A diagram consisting of letters of the alphabet or their numerical values is sometimes added.

When the epidemic has gained an entry, sherbet is made of *chānā* (fermented milk) and *guṛ* and placed on either side of the village. Sand and white mustard-seed are consecrated with *mantras* and scattered about it to drive the disease away. The villagers walk barefooted through the streets and lanes in parties at night, or at dawn and sunset, with drums, cymbals, and horns. The Hindus sing hymns and call on the name of Hari. This ceremony is known as Hari Saṃkīrttan, and is observed throughout the Province. A Muhammadan Faqīr either alone or at the head of a body of men, similarly goes about reciting passages from the Qurān and calling on God for delivery. A drum, on the parchment of which texts have been inscribed, is sometimes beaten. Needless to say he is remunerated for his labours, as are all the exorcists, and other functionaries who are called in on this and other occasions.

Brāhmans are often called in to read the Durgā Pāṭh and to worship Bhagvatī and Mahādeva. People recite the Bhāgvat Purāṇa day and night, one batch relieving another. Sometimes ceremonies known as Aṣṭam and Cabbiś Prahar are performed. A number of persons dance for twenty-four or thirty-six hours round a *tulsi* plant shouting "Rādhā Govinda Jay" whilst the poor are fed. On the last day of the Cabbiś Prahar a procession goes through the village shouting Hari Bol.

In Bihār an exorcist who is able to summon Māhāmāyā (Kālī) sits with a garland of red flowers round his neck and sings songs until he has worked himself into a frenzy. Then, accompanied by his adherents, he goes round the village beating drums and singing songs (*dul*) in praise of Sītalā when smallpox is prevalent, or of Durgā or Kālī in the case of cholera or plague. In his left hand he carries an earthen pot containing fire which is fed with incense, *ghī*, and resin, and in his right hand a cane or a string of horse-hair. Collections of rice and other offerings are made from house to house for a public *pūjā*. After the round has been completed, the pots are deposited beyond the village boundaries.

Among the Rājvaṁśīs of Kuch Bihār subscriptions are begged by women, or are collected by a party of men who carry a *kac*, or female figure, wearing a hideous mask, and holding a sword in its hand. Drums are beaten, and a man, armed with a sword and shield, has a mock fight with the figure, his victory symbolising the defeat of the disease. A somewhat similar custom obtains in Rangpur, where two of the party wear clothes and masks to represent Kālī, and carry swords, whilst the rest are grotesquely garbed and masked; but in this case there is no mimic battle.

The Kuch Bihār Muhammadans dance from house to house supporting a long bamboo, wrapped with strips of variegated cloth, and adorned with black yak tails at intervals and at the top, in order to collect doles for the performance of *Sinni* (a propitiatory service).

In Bihār, goats, rams, and buffaloes are sacrificed at the *Bhagvatī cabutrā*, which are to be found outside almost every village under a shed or tree. Bhagvatī, the goddess of epidemics, is represented by seven stones or earthen balls smeared with vermilion on a small platform two or three feet high.

In other parts of the Province other gods are propitiated. In Bogra the favourite deities are Rakṣā Caṇdī and the three-legged Jvareśvar; in the Tributary States west of Rānchī, Mainpāt and Burpāt; in Burdwān, Didi Thākruṇ is one of the chief cholera godlings; the Hos worship Desauli; the Sauria Pāhāṛiās, Camda Gosain; the Sāntāls, Boṅgā, and Boṅgi who are represented by rude mud images, or by stones marked with red and white, and who are propitiated with offerings and sacrifices only, no *mantras* being used; the up-country Hindus in the Sāntāl Parganās worship Marki, the goddess of pestilence, in the form of an earthen pot of water, whose sides are fantastically marked with quicklime and vermilion, with a ritual which resembles that employed in the worship of Kālī; the aborigines of Hazāribāgh perform sacrifices at the spot haunted by the Devī Mara, in whose honour a festival is observed annually during the Durgā Pūjā; whilst in Orissa the Grām Devati is propitiated. In Jalpaiguri, Tīsta Buṛi is worshipped in the form of a plantain stem decorated with wreaths of flowers, and Kalai as a winnowing-fan; the devotees of Mahanti keep vigil through the night, and Uddarcaṇḍī is propitiated by seven matrons with seven measures of paddy; whilst Hindus and Muhamaḍans alike make offerings to Hāwā Mā, Fatā Mā and Madār Pīr.

In Chotā Nāgpur when a house is attacked the floors are smeared every morning with mud brought from a paddy-field unmixed with cowdung. The villagers assemble at night and go round the village breaking everything they can find outside the houses. Care is of course taken that nothing valuable shall be thus sacrificed. An old pot and a broom, or an egg, and, among the Goālās, an old plough and basket also, are collected from each house and taken to the village boundary, where they are broken and piled under a tree (usually a *mahuā*) near a pathway. Among the aborigines the place is swept and the priest offers parched rice and vermilion. Fowls spotted with vermilion are sacrificed and are then cooked and eaten by those present. Among the Tāmāṛiās the exorcist puts a drop of the blood on each man's forehead, and the fowl's head is wrapped in a leaf and burned. A portion must be eaten by each householder before any other food is taken.

Elsewhere a pot resembling that used for Grāmbandhi is broken at cross-roads within another village, and old baskets, brooms, shoes and winnowing-fans are left with the fragments. A flag is planted on a bamboo flagstaff, and a man of low caste, who is believed to have power over the disease godling, mutters incantations. In the case of cholera Yoginī is sometimes worshipped at the same time. The idea here seems to be that the disease is represented by the pots and their contents. The inhabitants of the village in which the ceremony takes place resent it strongly, and a riot occasionally

results. The villagers may never look behind them as they are returning from the place.

If the epidemic is of a virulent type the Hos sometimes construct a leaf hut on a *sagar* (bullock cart with solid wheels) and place within it a mud image of the disease godling. It is then taken to the village boundary and left there with a prayer that the deity may not return. A somewhat similar ceremony is known in the Udaipur Tributary State as Rogbandhan. The Baiga places *bel* fruit, cocoanuts, an earthen pot spotted with red, blue, and black, a fowl, and some pieces of cloth of various colours in a *pālki* which is then taken in procession round the village and deposited near the southern boundary with prayers and vows of offerings and sacrifices if the disease should be stayed. On returning to the village everyone who has accompanied the procession must bathe.

In the Chittagong Hill Tracts an infected village is encircled with newly-spun white thread and a regular system of quarantine is strictly observed for seven days. The quarantine is sometimes inaugurated by sacrifices of goats and fowls. In addition to this the Chakmās scratch *mantras* or figures on five stones or earthen plates which are buried with the edge projecting, one in the centre of the village and the others outside it at the four point of the compass.

Amulets are worn and are sometimes buried in or near a house both for the prevention and cure of cholera, but for the latter purpose bleeding is also resorted to. The amulets usually contain medicinal drugs, such as asafœtida, croton seed, camphor, garlic or a yellow myrabolam. These are consecrated and attached to the arm, neck or loins by a blue thread. They are encased in cloth and not in metal, the idea apparently being that they shall purify the air. A consecrated pice or a *ghunsi* (waist thread) may be worn on the arm or loins, or a piece of copper attached with palm-leaf fibres to the waist. Marks are sometimes placed on the forehead to ward off the disease. Several other observances are also connected with purification or disinfection. *Dhūp karail* incense and sulphur are burned. Vinegar made from sugar-cane or *jāman* (*Eugenia jambolana*) is sprinkled in all the rooms or placed in a small pot smeared with soot and spotted with lime, which is suspended near the door, together with such articles as charcoal, onions tied with black thread or in a black cloth, chillies, mustard-seed, leaves of the lime, a *bel* fruit, a clod consecrated by a *Sādhu* or *Faqīr*, a *tāl* fruit with one stone, an old torn shoe, garlic, asafœtida, croton seed, iron, date or cactus thorns, or camphor. Fires are burned at every door and watched all night. Each house is swept daily, and the sweepings are thrown outside the village in an old basket. The origin of other observances is, however, less obvious. The outside corner of the house is marked with black; charmed herbs and roots, mustard, pulse and eggs are buried at the corners and sides and in the middle of the house; dried consecrated earth is thrown over every building; a cactus plant is put on the roof in an earthen vessel containing earth and water; dots of lime or ink are made on the door; *ghī*, barley, and sandal-wood are burned at a small hole at cross-roads; and the villagers refrain from having their clothes washed, from giving alms, and from boiling paddy in order to convert it into rice.

Cholera.

Various ceremonies are performed. Although they are mostly in honour of Kālī or some aboriginal godling with similar attributes, the women do not neglect to offer water

at every shrine. In Bihār they pour water upon a *nim* tree every evening after bathing, and the chief woman of the family worships at Bhagvatī's *cabutrā*. Her image is sometimes smeared with oil and vermilion and worshipped in an open place with goats, flowers, and sweetmeats, which are afterwards eaten by the worshippers. She is much feared during an epidemic of cholera, and it is very dangerous for anyone to stir out of doors at certain hours, as she roams about at midday and at night, and anyone who meets her is liable to be fatally attacked.

In Bengal Rakṣā Kālī and S'maśān Kālī are usually worshipped. The former may be worshipped privately, but the latter is only worshipped by public subscription and as a last resource. This *pūjā*, which is believed never to fail, may only be conducted by Brāhmans well versed in the Tantras. It takes place by the light of the new moon at the burning-ghāṭ, on the spot where the last cremation took place. A flag, which sometimes bears the figure of Hanumān, is put up after the ceremony, of which drinking is an essential part.

Rakṣā Kālī is usually propitiated by night at cross-roads. An image, made on the same evening, is worshipped with rice, flowers, plantain, betel, sweetmeats, pigeons, and goats, and is afterwards thrown into a river or tank outside the village with the idea of transferring the disease. Tuesdays and Saturdays are auspicious days.

Jala Kumāri, who is represented as a woman resembling Kālī, but riding on a stork, is worshipped in Chittagong in much the same manner as Rakṣā Kālī. Olā Bibi and Satya Pīr are worshipped by Faqīrs for Hindus and Muhammadans alike. Muhammadans sometimes adorn a goat with vermilion and garlands and take it through the village at night beating drums. Next day at nightfall its throat is cut and it is stuffed with straw and hung, together with an earthen pot, upon a long bamboo erected at the north-east corner of the village to scare away Olā Bibi.

In Orissa householders burn 108 ladles of *ghī* daily to propitiate the Grām Devati. Collections are also made for the public worship of the Grām Devati or Kālīṣī Ṭhākurāṇī, who usually lives under a banyan or tamarind tree. An exorcist—generally a man of low caste—washes the image in cold water, and, after rubbing it with oil and turmeric, puts flowers and vermilion on its body and dresses it in black clothes. Rice, flowers, milk, fowls, a black goat, and, sometimes, a buffalo are offered and drums are beaten. The exorcist works himself into a frenzy, and, as if the goddess were speaking through him, tells why Yoginī (the godling of cholera) has visited the village and how she may be propitiated. He then takes some new earthen pots dotted with lime and vermilion (sometimes also with sandal and soot), and fills them more than half full with *pānā* (a mixture of cheese, milk, *ghī*, *guṛ*, sugar and water). The pots are sometimes adorned with a ring of red lead just below the neck; and the head, hands and legs of Yoginī are depicted on them. They are then taken in procession through the village whilst songs are sung. A bamboo garlanded with flowers (which are usually red, as the goddess loves blood) is driven into the ground in a spot at some distance from the village, preferably at cross-roads, at each of the four points of the compass. A pot is placed near each bamboo, and, after *mantras* have been recited, is left there. It is believed that Yoginī drinks the mixture, and, if pleased with it, will leave the village.

In the Orissa Tributary States a somewhat similar but less elaborate ceremony is observed. Rice is strewn at cross-roads in the form of a square, and a wide-mouthed earthen pot containing milk, plantains, and other eatables is placed in the centre. A flag bearing the figure of Hanumān is planted near it.

Garlands of flowers which have been offered to Jagannāth or some other of the greater gods are often hung up over house doors, as Yoginī is believed to fear their power.

Other ceremonies are performed with the object of passing the disease on to another village. In Hazāribāgh the Pahan takes a goat, sheep, pig or buffalo at midnight to the mounds haunted by the spirit which presides over the disease, besmears it with a mixture of vermilion and *ghī*, and garlands it with red flowers. He worships, and the animal is then taken in procession round the village, whilst the Pahan carries a lighted lamp in which rice, *guṛ*, vermilion and *ghī* are placed. The animal is finally taken to the village boundary and driven out. The lamp is placed on the ground, and a fowl is sometimes left there as well. It is believed that anyone who crosses the path of the party whilst this ceremony is being performed will die of cholera. If the animal returns to the village the ceremony must be repeated. It is not touched by the people of any village which it may enter, but is driven away if possible.

In Orissa the corresponding ceremony is known as Bālibotia. A host of gods, including Grām Devati, and gods of the forest and burning-ghāṭ are worshipped at cross-roads. A rectangle is drawn on the ground with turmeric, and as many cones of rice are offered within it as there are gods to be invoked. A goat, whose head is painted vermilion and its eye-lids black, and which is dressed in cloth, is then presented and driven out by night. It is believed that the first person whom it sees will die.

In Bihār a small platform of dust is raised at cross-roads and a new pitcher is placed upon it. After worshipping with *sindur* and flowers, the villagers dedicate a pigeon and let it fly to a neighbouring village. To effect a cure, rice and pice touched by a patient are sometimes tied round an animal's neck and it is driven away.

Another Bihār custom is for the villagers to assemble at midnight in an open place or at cross-roads and call loudly to some person of a neighbouring village. If he replies, the disease will be transferred to him.

In Dināpur the disease godling is worshipped in a patient's house and the offerings are placed in the pathway leading to another house in an earthen pot or a rag dyed with turmeric, in the belief that the disease will be transferred to anyone who treads on them.

In Faridpur the iniquitous practice of placing the excreta of a cholera patient in an earthen pot, which is then floated down the river, with a similar object, is said to be observed, but is fortunately rare.

Rice and cloves touched by a patient are sometimes thrown into a well other than that which he uses, whilst a green bamboo, from which the branches have not been removed, is stuck in his own well so that the top projects a few feet above the ground.

The special practices observed during an epidemic of smallpox are almost all connected with the worship of S'italā, its patron deity. She is regarded as one of the seven forms of Ādi Sakti or primordial energy, and, in Bengal, is usually represented as a

Smallpox.

woman with a black body smeared with oil, and a vermilion face, clothed in a black *sāṛī* and riding upon an ass,[1] or, sometimes, a crocodile. Her body is studded with brass or copper to represent the rash, because she cures her devotees by taking the disease upon herself. She is crowned with a winnowing-fan, carries a pot under her left arm, and holds a broomstick in her right hand. She is worshipped by the oldest women of the household in a room (usually the Ṭhākurghar of the house), which is freshly smeared with cowdung and consecrated by being sprinkled with Ganges water. An earthen pitcher, wrapped in a new cloth dyed yellow with turmeric, is placed in the centre, and connected with the image by cotton thread similarly dyed. Incense is burned in a flame which is fed with *ghī*, and flowers and sandal paste are thrown before the feet of the goddess. The women of the household keep vigil all night, and at day-break bathe and offer *luchi* (bread cooked in *ghī*) and *pāyas* (rice boiled in milk and sugar). The offerings are distributed among the worshippers. No *mantras* are recited. A similar ritual is observed in Jalpaiguri in the worship of Borma Ṭhākurāṇī, another smallpox godling, but in this case no image is used. Women also go singing to the temple of S'ītalā on Tuesdays and Saturdays and worship with sweetmeats, *paramānna* (rice boiled in sugar and milk), betel-nuts and leaves, vermilion, cakes of flour and *guṛ*, cooling fruits and drinks, such as *chānā pānā* (a mixture of water, curds, *guṛ* and plantains) and wet gram, intended for her ass. In Purnea it is regarded as essential that these offerings should be begged by women from seven families. Goats and pigeons are often sacrificed, and, in the case of the lower castes, pigs also. S'ītalāṣṭaka (eight hymns in honour of the goddess) are sometimes chanted before her by Brāhmans, Ganaks or Mālis. Her image is occasionally taken from the temple and carried round the village at nightfall, in procession, with cymbals and drums, in a wooden *pālki* covered with red cloth, in which are placed offerings of vermilion, oil, and pice. In Western Bengal the sixty-four Yoginī who attend on S'ītalā and spread smallpox are worshipped on the same day, under a tree on the outskirts of the village. Jvarāsura or Jvara-putra, her minister, Ghaṇṭākarṇa, her husband, Raktabali, her maid-servant, Manasā, and, in Bihār, Bhagvtaī, are also worshipped.

In Bihār a triangular pit is sometimes dug at cross-roads and partially filled with fire, whilst the ground near is smeared with cowdung. A Brāhman mutters *mantras* and recites the Durgā Stotra, and the fire is fed with incense, *ghī*, cocoanuts, pice, flowers and other offerings.

In Orissa, where S'ītalā is also known as Basanta Ṭhākurāṇī, no image is used, and she is believed to dwell in a stone under a banyan tree. A Brāhman is attached to the spot. An annual festival is held on the day before the Caitra full moon, when an earthen vessel, whitened with lime and containing cactus branches, is placed at each corner of every house. During an epidemic the chief female member of each family fasts and wears a ring of straw round her neck. If anyone in the house should be attacked, she

[1] It is believed that asses' milk is a remedy for smallpox, and that their bray prevents the entry of smallpox into a village. Asses are sometimes fed with wet gram during an epidemic.

goes to the shrine and makes vows and offerings. The latter are dedicated by the Brāhman and he recites *mantras*.

To prevent the disease from entering a house the unmarried girls place a stone, which represents the goddess, in a small hole at the door of the house, or in a room which is kept locked, and every morning and evening, after washing it, anointing it with vermilion, and adorning it with flowers, offer milk, cheese, and various kinds of plants and fruits. Public worship is also held by a Brāhman in a hut built for the purpose. The goddess is represented by an earthen pot painted vermilion and wrapped in red cloth, on the top of which are placed a cocoanut and a mango twig. The usual offerings are made, and a Brāhman recites hymns in her honour whilst a *ghī*-fed lamp is burned.

Mangalā is also worshipped during epidemics of smallpox in Angul. Libations of *guṛ* and water are poured to her before the house, and mothers vow to give ornaments or a piece of a new *sāṛī* to her image, when it is next brought from Kākatpur in Cuttack.

A curious custom is observed among the aborigines of Hazāribāgh. Mango twigs are put in two earthen pots full of water. The pots are covered with earthen plates containing paddy, on which lighted oil-lamps are placed. A cane is laid beside each. The Sokhā worships the Devī Mara for three, seven, or nine days. At the end of this time the pots are taken, together with a goat or sheep and an iron bar, to the village boundary. The animal is killed and eaten by the Sokhā and his attendants, and the skin and bones are buried there, the iron bar being fixed on the boundary to mark the spot.

There is a regular system of treatment for smallpox. The patient is confined for eight days to a separate room which is washed. The ground near the bed is smeared with cowdung, and water is placed there in an earthen pot. *Nim* twigs are placed on the bed or suspended from the ceiling, and the patient is fanned with a *nim* branch. A Māli burns incense, offers flowers and sweets, and sings hymns in honour of Sítalā or Bhagvatī, morning and evening. Visitors must wash their feet before entering the room, and must never wear coloured (especially red) clothes. The patient and all his family are strictly dieted. They must abstain from fish, flesh, intoxicating liquor, oil, and *ghī*. The latter substances may not even be applied to their hair or body, and no fish may be brought into the house. No clothes may be washed, and no alms given. On the ninth day the patient is bathed and made to touch oil. Cakes of raw rice and sugar are distributed amongst boys and girls, and the goddess is worshipped with offerings similar to those made at her temple. Consecrated food and drink offered to Sítalā, rice cooked in mare's milk, sugar, and *ajwain* (*Carum copticum*) are eaten, and amulets such as a Sítalā Kavac, or myrabolams or garlic, consecrated by an exorcist or astrologer, worn, both for the prevention and cure of smallpox. A *nim* branch is hung at the door of the house to ward off the infection, and a *ghī*-fed lamp is kept burning. Both Hindus and Muhammadans often blow conches at sunrise and sunset, as it is believed that Sítalā will not visit any place where the sound of the conch is heard.

Cattle-disease is usually dealt with in much the same way as other epidemics, but a curious custom obtains in Rānchī. A wooden cow-bell is tied to a cowherd in the west of the village. He then runs beyond the village boundary with a black fowl, rice, and vermilion in his hands, pursued by the boys of the village with *kend* sticks (*Diospyros*

tomentosa). Once over the boundary the bell and other articles are thrown away and all return to the *bāthān*, taking care not to look behind them. A black goat is sacrificed, and a public feast given, when the *bāthān* is reached.

Female Diseases.

Female diseases are believed to be usually caused either by evil spirits or by the evil eye. Hysteria is one of the former class. Exorcism is performed, and, when the spirit has left its victim and taken refuge in a mango or banyan tree, the exorcist drives in nails at the four corners of the house to prevent its re-entry. He then goes to the tree after midnight, and, after offering vermilion, pice, *arwā*, mustard and flowers, hammers in nails to secure the spirit, which is sometimes represented by some of the woman's hair or by a tortoise.

Barrenness is caused by the evil eye. The exorcist goes after midnight to cross-roads or a bathing-ghāṭ, and after worshipping with vermilion, *arwā*, flowers, and, sometimes, an old broom, puts pice into holes in the ground and marks the place with vermilion. The curse is transferred to the first woman who passes over it. A *mādulī* containing the root of small tamarind tree is also attached to the patient's hair.

Mṛta-batsā is similarly transferred by the burial of the body of a still-born child in an earthen vessel at cross-roads; or a dark woman takes a piece of owl's bone, the flesh of a black pigeon, and some human hair, wraps them in a plantain leaf sprinkled with vermilion and carries them naked at night to cross-roads, and leaves them there. This remedy fails, however, if the articles are touched by a childless widow. When a woman dies in child-birth, her legs are sometimes cut off before cremation and buried separately to ensure that she shall not return to be similarly afflicted, or to annoy others in the form of a Curail.

To expedite delivery a white onion is tied to the woman's left arm with a black thread, and some of her hair is burned. A geometrical figure is painted on a piece of wood and shown to her. It is then washed off, and the washings are given to her to drink.

During labour pains a black stone smeared with oil and vermilion, which represents Dharmma Ṭhākur, is worshipped on behalf of the woman in a temple by a man of low caste, known as a Dharmma Paṇdit.

Protection of Babes.

A large number of practices are observed with the object of warding off evil from new-born babes, who are particularly liable to the attacks of malignant spirits. The confinement often takes place in a separate hut (*āturghar* or *sutikāgār*) set apart for the purpose, especially in Eastern Bengal. This hut is surrounded by a cordon of thorny cane leaves, pieces of the *kanta kumra* creeper (*Cucurbita fepo*), fragments of fishermen's nets, rice, and white mustard-seed, all of which must be duly consecrated. A bundle of mustard, rice and garlic is sometimes placed on the north side of the hut, and old shoes are put behind it; whilst a line of cowdung is drawn round the walls. Three parallel lines, representing Rām, Lakṣman and Sitā, are drawn with charcoal on the ground before the entrance, in the belief that no evil spirit will cross them. A pot containing fire is placed at the door of the room and kept burning day and night. No one is permitted to enter the room without touching this fire, and visitors must also wash their feet and dust their clothes. No one may touch the bamboos of the roof and thus

give evil spirits an opportunity of alighting.[1] A fire is also kept burning inside the room until the Nikāsan ceremony has been performed. The child's head and feet are touched with various substances, such as raisins, sulphur, mustard, salt, chillies, turmeric, celery seed, cakes of chaff or cowdung mixed with oil (oil is particularly hateful to evil spirits), *bel* fruit, scorpions, snake skins, bones, pig's dung (to keep off Yoginī), and women's hair, which are then burned, so that the fumes may be inhaled by the child. The mother must keep a piece of iron with her throughout the time, and must not get out of bed without it. A pot of ashes, spotted with lime, a broomstick, preferably one from the burning-ghāṭ, a torn shoe, clay, reeds, straw, garlic, *aich* (*Morinda citrifolia*), *bach* (*Flacourtia ramontehi*), and *birsing* (*Erythrina indica*) plants, deer's horns, a bag of mustard-seed, boiled paddy, aromatic leaves, knives, spears, sickles, nut-crackers, or the skull of a cow with the horns plastered with cowdung, vermilion and cowries, are placed on, near or under the child's bed. The Kols plant an arrow with an iron head pointing upwards near the babe's head, and leave it there for seven days. The Tāmāriās put a twig of the castor-plant under the pillow. The Kuṛmīs of Sinhbhum use a Kajaltā[2] in a similar manner. Tigers' or leopards' claws attached to silver, copper or *aṣṭadhātu*, crocodiles' teeth, twisted conch shells, pice or half pice, bits of broomsticks, *riṭhā* seeds (*Sapindus mukorossi*) consecrated pieces of blue or white thread or jute, coral (to avert the evil eye), a ring from a scorpion's tail, or a *manuṣyamaṇi*,[3] are tied round the child's waist according to the directions of the exorcist (who of course prescribes what is to be done throughout), or roots and *mantras* on paper or palm leaves are attached to its right arm or its neck. A favourite device is to fasten an iron ring round its left arm or leg. Iron which has been used as prisoners' fetters is particularly desirable for this purpose. A piece of rag torn from the cloth of a maternal uncle is sometimes wrapped round the child's body, and lamp-black is applied to its forehead and eyelids, the palms of its hands and the soles of its feet. The children of women whose other children have been stillborn or have died shortly after birth are made to wear a *mādulī* containing a stone of an *Āmṛā* (*Spondias dulcis*) fruit, plucked whilst the tree is in flower, and encased in copper or gold. The flabby portion of the child's left ear is sometimes slit, or the left nostril is slit or punctured. Should the child be attacked by cramp, it is touched by a boy who has had it and recovered, or a partridge is put in the room and guns fired outside it. *Murttidhara*, a disease in which the child changes colour rapidly from black to red and white and back again, is regarded as the result of possession and is treated by amulets which contain *mantras*. Weakness of children in the absence of any apparent disease is transferred to others in the same way as barrenness.

If the child is attacked by an epidemic, the exorcist blows upon it and recites *mantras*. It is made to touch an earthen pot full of curry and rice and garlanded with red flowers, which is then left at cross-roads outside the village.

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1 A similar superstition is observed at Hindu marriages. If anybody touches the roof or leans against the wall whilst the bride is being turned round the bridegroom, it is believed that the pair will quarrel all their lives.

2 A Kajaltā is a spoon-shaped article on which soot is made to form by smearing mustard-oil upon it and holding it in the flame of a lamp. The soot is used as an ointment for the child's eyes.

3 A piece of pale-brown bone of the shape and size of a blackberry, which is said to rarely develop in the forehead of a fortunate man. It shoots off with some force from the body when it is being cremated.

Consecrated sand and white mustard-seed are scattered about the room, and sometimes at night over the child's bed. The mouth of a broken pitcher, an iron axe, a bamboo ladder, paddy, cactus thorns, or the skull of a cow are placed in the room, and the bones of a cow which has been struck by lightning, or of a vulture, the skull of a bastard child, a kite's claws and various roots are buried within it. The Muhammadans draw a circle round the bed, and passages from the Qurān and the names of angels are recited every night to scare away evil spirits. All the doors and windows of the room are sometimes netted, and thorny plants are placed at the four corners. A *keu* branch (*Pandanus fœtidus*) is hung from each corner of the roof. A *sarā* inscribed with *mantras* may be buried in each corner of the room, whilst a fifth is hung over the child's bed. Slips of paper bearing *mantras*, or the names of Hari, Rām and Durgā, written by a Brāhman, are hung on the walls. An iron nail is sometimes driven into each leg of the child's *cārpāi* and *ālo* (rice prepared from paddy, without boiling), mustard, and a *kend* branch are tied in a rag to one of the legs at the head of the bed. Guns are sometimes fired daily outside the room.

In Bihār a Yamadīp (a *cirāg* which is used for the illuminations on the night before Dewāli and then discarded) is sometimes used in preference to other lamps during a confinement, as it is believed to possess the virtue of scaring away evil spirits.

Various articles are placed at the door of the room into which an iron nail is sometimes driven. These are generally much the same as the things placed within it, such as thorns, iron in various forms, old shoes, cloth wicks, green grass, turmeric, a snake's skin, a cow's skull, a tortoise shell, or a pot of water, and need not be described at length. The precautions are usually observed, and no alms may be given by the parents until after the Nikāsan ceremony (generally on the twelfth day [1]), when the child is bathed in hot water and brought out. The sixth day is critical, as on that day S'aṣṭhī, the patron deity of children, will, if offended, send her messengers Pañcā [2] and Pañcī to take back the child. She must accordingly be propitiated. An earthen pot containing a scrap of iron and a light is left on the road on the evening of the fifth day, and on the sixth day she is worshipped in the form of a stone smeared with vermilion, under a banyan tree. The ceremony is performed by a Brāhman, and cooked rice, curry, *dāl*, sweetmeats, cakes, and flowers are offered, the food being afterwards given to the mother to eat. This *pūjā* is often repeated on the 21st day in the case of a male, or on the 30th day for a female child. Mātṛkā and Dwārpāl, a host of protecting deities, are also worshipped. The former sometimes occupy the supreme place of worship until the babe has passed its infancy, when S'aṣṭhī takes their place. The latter are usually worshipped on the same days as S'aṣṭhi. Meanwhile, on the sixth day, the confinement room is kept closed throughout the day, the door only being opened to allow the mother to take in her food. The child, after being laid for a moment on a palm-leaf fan covered with new cloth, is transferred to the lap of its mother and kept there till next morning. A

[1] Among the Sāntāls the child is brought out on the ninth day. In some places precautions are observed for as long as thirty days.

[2] The special attribute of Pañcā or Pañcānan is to cause fits and foaming at the mouth. Kāndunī Burī or Pañcī causes excessive crying. Śaṣṭhī controls both of these godlings, and her worship is therefore essential.

square is painted on the wall with turmeric and *āmlakī* (*Phyllanthus Emblica*), and cowries are fixed round it. Within it figures of Chaṭi and S'aṣṭhī are depicted, and are worshipped by the mother. Children are sometimes dedicated to S'aṣṭhī, Pañcā or Pañcī by being named after them in the hope that their lives may be spared. This is especially common in cases in which the woman believes that her misfortunes have been cured by exorcism.

It is not unusual to see one of the pillars at the corner or at the gate of a *Dargāh* or Muhammadan tomb smeared with oil and vermilion. This is done by persons of low caste for the worship of Pañcā Pañcī and Madār—the latter a Pīr—to whom vows are made by mothers, to be fulfilled if their children should reach a certain age. These godlings are also worshipped under certain old trees in every village. The Sebāit of Madār provides amulets to ward off evil spirits from mother and child.

Other Diseases.

Enlargement of the spleen in children is cured by extracting a live snail from its shell, which is then filled with medicinal roots and parings from each of the child's finger and toe-nails and buried beside the kitchen *culā* (stove). When the sufferer is an adult, similar parings are placed in the mouth of a *taki* fish, which is then suspended, mouth upwards, over the stove. An alternative treatment in the latter case is to stick 108 date-thorns into a plantain and hang it from the verandah roof in front of the door.

Fever is usually cured by means of amulets, which may contain saffron, cow's bile, *garai* (*Cleislanthus collinus*) *āpāng* (*Achyranthes atternifolia*), a piece of the root of a pipal growing above the ground, or the roots of *eknād* (*Cissampelos pereira*), a castor-oil plant growing on a house-top, *circirā*, *dūrbbā* grass, betel-pepper, or *tulsi*. Among the Sāntāls small pieces of the bones of the *Pteropus edwardsi* or bear's hair mixed with certain roots are used.

Tejara fever (which occurs every third day) is treated as a case of possession. A fire is burned before the patient and he is soundly beaten with an old shoe.

It is sometimes believed that when anyone is attacked by illness it is a sign that Kālī has come to disturb the family in search of food and lodging, and huts are accordingly erected and goats sacrificed at a distance from the village.

In addition to the superstitious remedies referred to above, illness is met by propitiation of the gods by prayer and worship (S'ānti and Svastyayana), or by penance (Cāndrāyaṇa), such as shaving of the head or almsgiving, for the sins committed in a previous existence, to which the visitation is attributed. There is, however, little doubt that the masses place far greater reliance on the more fantastic observances, some of which have been described, and the extent of their faith would seem to be indicated by the results, which often exceed anything that could be expected from the means employed.

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1905-1906.

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MEMOIRS

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EARTH-EATING AND THE EARTH-EATING HABIT IN INDIA.

BY

DAVID HOOPER AND HAROLD H. MANN.

(WITH ONE PLATE.)

Smithsonian Institution,
OCT 12 1906
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Earth-Eating and the Earth-Eating Habit in India.

(With one plate.)

By David Hooper *and* Harold H. Mann.

[Read 6th December, 1905.]

Among all the curious perversions of taste existing in various parts of the world, there are few so peculiar or so apparently unaccountable as that of eating earth. Were the habit not very widely extended over the world, it would perhaps hardly be worth any extended investigation; but it is found among the peoples of every continent, and apparently of almost every race. In India itself there are earth-eaters belonging to every main ethnological division and to every type of climate. The immediate cause, however, which led to the collection of the facts and data in the paper now presented, was the occurrence of the habit among coolies in tea-gardens in various parts of North-Eastern India, and the serious results which it had produced. Originally planned as a collection of data from one small corner of India, it has grown until, owing to the kindness of a very large number of correspondents, it contains materials drawn from almost every corner of the country.

It will be well to divide the consideration of the subject into sections as follows:—

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I. Extent of Earth-Eating in other Countries.

The use of clay and other earthy substances as a food has often been referred to by authors in Europe. The first historic notice is by Pliny, who relates that the ancient Romans had a dish called *alica* or *frumenta* made with Indian corn mixed with chalk collected from the hills of Puteoli near Naples. There is no need, however, to go back to the time of this author for examples of its use, for at present, in many parts of Germany clay is used on bread as a substitute for butter, and is termed 'stone' butter when employed for this purpose. In the northern part of Sweden, earth is often baked into bread, and it is sold in the public market in Italy as well as on the Island of Sardinia. In Finland an earth is used for eating which consists mainly of the shells of minute infusoria. Captain Franklin found earth being used as food among an "Indian" tribe near the Arctic Ocean.

Turning to America, it is recorded in Chambers's "Encyclopædia" that clay is eaten by the Rotocudos and other savage tribes, as also in Georgia and the Carolinas by negroes and poor whites. The Ottomacs, a tribe near the Orinoco, eat a species of unctuous clay, and this diet, which no doubt owed its introduction to famine, is not

unfrequently adopted in Brazil. In the island of Martinique in the Antilles a species of red earth or yellowish tufa of volcanic origin was formerly sold in the markets for human consumption, but it is believed that the use of this clay has now died out. The "Indians" of South America use a particular clay called *phassa* or *pasa* for mixing with their food. Venegas assert that the Natives of California mix red earth into their acorn bread "to make the bread sweet and make it go further." The Miscas of Florida had in their language the word *jipatera*—a disease from eating earth, and Caberza de Vaca informs us that it was customary for the "Indians" to eat earth mixed with beans as their ordinary food.

The custom of eating clay has been common among the negroes of Guinea in West Africa from time immemorial. At the time they were transported to the West Indies to work as slaves on the plantations, they attempted to carry their custom to their new home; but the West Indian clay had a deleterious effect on their health, and strong measures were taken to suppress the practice. Dr. Rutherford tells us that earth-eating prevails pretty well all along the West Coast of Africa. On the east coast of Africa, at Zanzibar, the habit is said to be common, and a disease called 'Safura' seems to be brought on by indulging in it.

According to Sir Richard Burton[1] the earth-eating habit prevailed in Arabia during the time of his visit about half a century ago. A peculiar earth was pointed out to him, a yellow loam or bole called by the Arabs *Tafl*, by the Persians *Gil-i-Sarshin*, and by the Sindians *Metu*. It was used as a soap in some parts of the East, and was supposed to have some miraculous properties owing to the prophet having employed it with success as a medicinal agent. Burton found that its only use was its being eaten by anæmic women.

N. Annandale has observed[2] that both Malay and Siamese women eat a kind of earth dug out of the banks of the river and roasted; this is administered as a tonic. In Borneo the natives are accustomed to the use of various kinds of earth.[3] St. John says that in their boat expeditions the natives take a supply of red ochre in case of becoming short of other provisions, and a white oleaginous clay is used for the same purpose. Bishop McDoughall states: "There is a certain slimy clay which the Sakarran Dyaks always provide themselves with when they make their excursions in their boats, and which they suck when their stock of rice is exhausted; they say it is very nutritious." Mr. Crossland informs us that the Undup occasionally eat a clay much resembling fuller's earth; they do not regard it as very palatable but consider it a salutary custom and imagined that the earth acted as a purifier. Odeardo Beccari[4] also refers to the Dyaks of Borneo nibbling greedily a peculiar stone as if it were a sweetmeat. It was a kind of clayey schist, soft and brittle and greasy to the touch. "It certainly was not eaten to appease hunger, but as a delicacy or perhaps to assuage the instinctive craving of the stomach for some substance." Another Italian explorer, L. M. D'Albertis, says[5] that the natives of New Guinea near Hall Sound chew and swallow red clay. The taste for eating earth is extensive in Java, where small square reddish cakes of

1. *Pilgrimage to Al-Madineh and Meccah*, Vol. I., 415.
2. *Fasciculi Malayenses, Anthropology*, Part II, p. 62.
3. H. Ling Roth, *The Natives of Sarawak and British North Borneo.*
4. *Wanderings in the Great Forests of Borneo*, 1904, pp. 335, 337.
5. *New Guinea: What I did and what I saw*, 1880, p. 89.

earth are sold in the villages as a regular food. In Java and Sumatra this earth is specially prepared for use. The sand and any hard substances are first removed and then it is reduced to paste by kneading it with water. The dressed clay is finally moulded into small cakes or tablets about the thickness of lead pencils, which are baked or roasted in an iron saucepan. The Javanese often consume the clay made into little figures of animals and men. Some of these earths have been analysed and have been found to consist mostly of the remains of animalculæ and plants deposited in fresh water.

The Annamites look upon raw and baked clay as a great delicacy. In Tonkin the "Geophages" or earth-eaters prepare little shavings or fritters of clay baked on hot bricks. A sample was chemically examined by M. Demoussy of the Paris Museum (Jardin des Plantes) with the result that in composition and properties it was like kaolin and was totally destitute of nutrition. The Chinese are addicted to the habit and eat a white clay free from all organic remains. Hanbury[1] refers to two earths sold in the shops for medicinal and other purposes. The first of these was an aluminous earth (*Chih-shih-che*) of a pale pinkish colour, or white, in soft, friable irregular masses with the composition of kaolin; the second was an argillaceous earth (*Fei-hwo-shih*) of a pale yellowish colour, soft to the touch, and formed into little rectangular oblong blocks, like those sold in the Indian bazars. The Chinese, in many parts, mix gypsum with pulse, and thus form a jelly, which they greatly relish.

Among the Ainos, the aborigines of Japan, there is a kind of clay which is eaten to a considerable extent, mixed with fragments of the leaves of a plant, and used as an ingredient in the preparation of soup. The clay occurs in a bed in the valley of Tsie-tonai (eat-earth valley) on the north of the coast of Yesso. It is of light-grey colour and fine consistence, and is consumed, not as a matter of necessity but because it is believed to contain some beneficial ingredient.

II. The Earth-Eaters of India.

Such are a few of the reference we have been able to find to the tribes and peoples among whom the earth-eating habit has been noticed on other continents, and in other parts of Asia. If we turn to India, the first thing which strikes the observer is that habits of this kind are no new thing, and were as well known in classic times as at the present day, having been mentioned by both Sanscrit and Arabic writers.

The most noteworthy of these references occurs in the poems of Kalidasa, whose period may, with some certainty, be placed in the fifth century A.D. The following translation of the *slokas* Nos. 3 and 4, of Canto III of *Raghuvamsa*, are perhaps the most interesting passages in this connection.

"3. While the king was in the queen-consort's company in his private chamber, he did not feel any pleasure from smelling the sweet odour of her mouth, which had become fragrant by partaking of baked clay, just as an elephant is not satiated by smelling the fragrant exhalations which emanate from the dried-up water-pool in the forest, after it has been partially filled by the first shower of rain towards the close of the hot weather.

[1] *Science Papers*, p. 219.

"4. (Speaking of Sudaksina, the queen of Ayodhya before she gave birth to Raghu). As if premeditating that her son will subsequently enjoy (*i.e.*, rule over) the whole earth, just as Indra rules over heaven by driving his chariot to all the quarters thereof, the queen first felt a hankering for eating baked clay only, to the exclusion of all other well-flavoured articles of food."

The well-known Sanskrit commentator Mallinatha, who flourished in the 13th century A.D., in his commentary on the *Raghuvamsa*, Canto III, verse 3, observes: "It is well-known among men that pregnant women eat earth."

Again, in the Agnipurana we read that the earth is taken as a purifier by religious devotees: "O earth (clay), I take thee consecrated by Kasyapa; O earth, take away the sins and misdeeds that I have committed."

In a Bengali play entitled "Tazzab Byapar" (recently performed at the Star Theatre, Calcutta) which evidently has a strong historic basis, a street-hawker of baked clay-cups figures among the *dramatis personæ*. She puffs her wares in a song the purport of which is that the cups of baked clay are well made, very crisp to eat, and, at the same time, cheap, and that delicate ladies who are about to become mothers, should at once buy them, for by eating them they will be blessed with sons.

An early reference to the use of edible clay among the Arabs is quoted by LeClerc.[1] It is in connection with the life of Hajjaj, the notorious Lieutenant of the Umayyad Khalif Abdul Malik, who reigned from 685 to 705 A.D. Hajjaj once acquired the habit of eating clay. Wishing to rid himself of it he sought the advice of his doctor Theodosus. "The remedy," replied the doctor, "is the resolution of a man of your character." Hajjaj discontinued eating clay from that moment. A long extract is given in a later part of this paper describing the materials eaten, in Arabia, extracted from the work of the physician El-Baitar.

In giving an account of such tribes and castes throughout India as have been noticed to be now addicted to the earth-eating habit, we shall arrange the summary of our information according to the provinces from which the records have been received.

(*a*) *Assam*—The habit of eating earth prevails extensively in Assam, and is not confined to any one class. All tea garden coolies are, on occasions, addicted to the habit, especially the so-called North-Westerns, who come chiefly from Bihar, those from the Central Provinces (principally from near Sambalpur), Sylhet Bengalis, Bhuya-Ghatwals, Paharis, Butea Paharis. The best working classes unfortunately are affected by it. Among all these, pregnant women are given to the custom, but it is not confined to them. It is rare for men to eat earth, but a few do so, and these are usually of poor development.

Often young girls take to it, and the habit has been observed to be incidental to the period of first menstruation. The habit may be continued after marriage, during the early months of pregnancy. We might compare with this the occasional and peculiar taste of English schoolgirls for eating slate pencils and coal.

It is curious to note that the habit does not seem to exist to such an extent among

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[1] *Histoire de la Medecine Arabe* 1, p. 83.

people living their own life in villages, whether Assamese or others. How far this may be due to the conditions of constant work prevalent on tea estates is a matter for further study.

Mughs are not much addicted to the habit, and frequently gives it up after having acquired it.

(*b*) *Bengal*—In Bengal the habit is widespread, and though it prevails in some districts to a greater extent than in others, yet its use, more or less, seems quite general. It is said to affect Hindus of all castes as well as Muhammadans, but it is more common among the middle and lower classes. Our information leads us to believe that there is no caste or tribe free from the habit. As a rule it is confined to pregnant women and girls of tender age; the former usually employ the *patkholas*, or the burnt earth sold in the market in the form of *khupris* (tiles). Only occasionally have men been seen to eat earth, as a habit, though its use as a medicine is not uncommon.

(*c*) *Bombay*—In Bombay women of all communities, including Parsees, are earth-eaters, but only to a limited extent. As far as is known it is confined to women when they are *enceinte* or during menstruation. As is the case in other parts of India, men rarely eat it in this Presidency.

In Baroda no tribes or castes enjoy immunity from the evil. The custom generally prevails among pregnant women and young children. Cases of male adults acquiring the habit are rare.

(*d*) *Panjab and Frontier Province*—There is no special class of people in Delhi addicted to earth-eating; they are found in all states and grades of society. The very rich and the very poor are not free from it. The time of life at which this habit is indulged in varies. Some eat it in childhood extending to the age of 10 or 12 years, while others eat it occasionally all their lives. Fakirs and religiously retired people eat it without any special motive, but we have not come across an instance in which it has been used with the purpose of imposing on the charitable.

Not only in the cities of the Panjab but also among the peasantry the habit seems to be common. Swynnerton says:[1] "A few miles to the north of (the little village of) Ghazi (on the river Indus), where the hills begin to close in, we can almost see the collection of hamlets known as Torvela, *the inhabitants of which are addicted to the curious vice of eating clay*, as people in other parts are given to the consumption of opium."

According to Mr. Hughes-Buller the habit is said to prevail among all the tribes in British and Administered Areas of Baluchistan, with the exception of the Musa Khel *tahsil* of the Loralai District and Dalbandin *sub-tahsil* of the Chagal District. In the Kalat State the habit is prevalent among some of the Brahui women and among a few of the Makranis during pregnancy. In Las Bela it is common among nearly all pregnant women The tribes are chiefly the Afghans, Baloch Brahuis and Lasis. From Quetta the information is added that the habit of earth-eating is universal among the women in Afghanistan during the period of their pregnancy. It is, however, almost entirely confined to pregnant women, though in Las Bela a few men are also addicted to it. One

[1] *The Adventures of the Panjab Hero Raja Rasalu, and other Folk-tales of the Panjab*, 1884.

official remarks that pregnant women eat earth during the last months of their pregnancy, and another reports that it is eaten during the first three months. There seems to be some difference in custom in this respect, but that most widely prevalent consists, apparently, in eating during the first two or three months. Indeed, some Afghans state, that the fact of a wife having taken to earth-eating is regarded as a sign of the commencement of pregnancy. It is also reported from Quetta, Hindubagh, Fort Sandeman, Loralai, Sibi and Koklu, that sometimes, but rarely, women not pregnant indulge in the habit.

As already mentioned, information has been received that in one or two of the Frontier districts (Musa Khel, Dalbandin) the habit of earth-eating is not known among the tribes, but the information seems of doubtful accuracy. The principal of these tribes are: the Isot, Jafar, Pani, and Zamari Afghans; and Kharsin or Gharshin Saiads, the Muhammad-Nasni, Tuti Rakhshani, Mengal, Sasoli, and Sumalani Bruhuis.

(*e*) *Madras, Mysore and Travancore.*—In Mysore and many of the districts in Madras the habit is common. In the bazars of Madras and Bangalore specially prepared clay is sold for consumption. In the planting districts of the Wynaad, the Canarese coolie women and children and Coimbatore Tamils indulge in the habit. Men rarely eat it, and the jungle tribes hardly ever. The lower classes of Tamils and Badagas, chiefly women, eat earth on the Nilgiris. Muhammadans or better-class Tamils are not known to practise the custom. In Travancore and Cochin, earth-eaters are found largely among the imported labour in the tea estates. The coolies are Tamil-speaking people from Tinnevelly, Trichinopoly, and Nagercoil in South India, and consist of the Hindu castes of Pariah, Chakkalie, Pallar, Shanar and Elava, and a few Christians. The Kanies or Hill tribes have not been observed to eat earth, and the Malayalis or natives of Travancore State only occasionally indulge. Women, girls, and even crawling children contract the habit. In one estate in Travancore the medical officer reports that 75 per cent. of the women and children are earth-eaters. Men, as a rule, are not known to indulge.

In this review of the habit from the north to the south of India, it will be noticed that earth-eating prevails among all castes of the community and is not restricted to the Aryan race. Mr. S. C. Mitra has recently published a "Note on Clay-eating as a Racial Characteristic," [1] in which he asserts that "the use of clay for food is more confined to the Indian branch of the Aryan race, some Dravidian races, and the various peoples belonging to the Mongolian stock, than to any other offshoot of the Aryan family or to any other race." Our information has certainly not permitted us to draw so definite a conclusion. The peoples mentioned by Mr. Mitra certainly all eat clay in one form or another, but the habit seems hardly to be confined within any such racial bounds. Rather should we believe that the custom is all but universally known throughout India, and though the frequency of its adoption may vary much according to the social position of the particular caste or tribe to which individuals may belong, there is no sufficient evidence to state that such frequency follows any ethnological lines. We are aware that the matter deserves and needs a much closer investigation than we have been able to give to it, but on the basis of the

[1] *Journ. Anthropol. Soc. Bombay,* VII (1905), pp. 284-290.

facts so far collected, we are hardly able to adopt the conclusions recently suggested by Mr. Mitra.

III. The Materials used for Earth-Eating.

When we come to consider the materials which are used by those who practise the habit of earth-eating, we find the most extraordinary variety of material. Hitherto it has usually been supposed that nearly all were either kaolin or fuller's earth, or something of a similar nature. It seems, however, from the collection we have made, that this is by no means the case, and that earth of almost every description, with the exception of sand, can be and is employed.

We have collected the principal references to materials noticed as used in the past, and a summary of them will well preface an account of the samples we have ourselves collected.

Under the title of Fuller's Earth, V. Ball remarked in 1881 :[1] "It is believed that earths of this nature afford the principal part of those which are used as a comestible. The practice of earth-eating is widespread over the world, and though there is not much information available on the subject in reference to India, the fact is known that these edible clays from different localities are to be had in most Indian bazars, and it seems possible that the practice is not limited merely to pregnant women as is sometimes stated."

In some parts of Western Sind, according to Mr. W. T. Blanford,[2] a pale-greenish clay is found which is used for washing cloth : it is also eaten by pregnant women.

Baden Powell,[3] under the heading of *Mitti gachni*, describes a soft, saponine and drab-coloured stone like fuller's earth sold in small pieces for medicinal purposes and for cleaning the hair. A stone of this nature is met with in all the bazars as *mitti Multani* or *gul-i-Multani*, and is imported in large quantities from the interior of the Western Range to Dehra Ghazi Khan. There are three kinds of this clay. The first is white, which is *khajru* or edible, and obtained from Bikanir and Jesalmir. The second is yellow or *bhakri*, used by the poorer classes for dyeing clothes. The third is light-green, *sabz mitti*, used for washing and cleaning the hair. A genuine sample of fuller's earth from Yara of Dera Ghazi Khan marked *mitti sabz khurdani* is recorded by Baden Powell as being eaten by women during pregnancy.

An interesting note has been made by R. D. Oldham[4] in 1882, recording the occurrence of edible earth. "In the valley of Manipur is a small tila to the left of the main road leading northwards from the city, there is exposed an unctuous clayey rock, which is dug out and sold in the bazar, being esteemed a delicacy to which medicinal virtues are attributed." In the Indian Museum, Calcutta, there is shown a sample of edible clay from Manipur, and named *cherbak*.

In the chief cities of India, edible clay is sold in the shops in a prepared form. The *patkhola* of Calcutta is sold as a thin shell-shaped disc of a terra-cotta colour with a hole in the centre, $1\frac{3}{4}$ inch in diameter, and weighing 6·25 grams or about a quarter of an

1 *Manual of the Geology of India* (Economic Geology, 1881), V.

2 *Memoirs, Geological Survey of India*, VII, p. 195.

3 *Panjab Products*, p. 20.

4 "Geology of Manipur and the Naga Hills," *Memoirs, Geological Survey of India*, XIX, p. 241.

ounce (Fig. 1). In the Hooghly district, the prepared material consists of a round cake of clay of light-red colour, two inches in diameter by half an inch in thickness, weighing about 40 grams or one and a half ounce (Fig. 2). In Chittagong, plates of a larger size are made from the clay obtained from Bibirhat and Badderhat; these are half-baked plates, about 8 or 9 inches in diameter; and cost three pies each. In other parts of Bengal burnt earth is sold in the market in the form of *kupris* or tiles.

In Madras we have been supplied with two kinds of prepared edible clay sold in the bazars. One is a fine white variety made into square sticks of about four inches in length, used by Vishnavites to mark their foreheads (Fig. 3). The other is a greyish-coloured clay made into square sticks of about two inches long by half an inch in thickness (Fig. 4). The latter are used by the Saivites for grinding and mixing with the first sip of water taken just before meals, after the daily worship of the household god is over. It is also the kind consumed by women suffering from the earth-eating habit in Madras and Bangalore. This prepared clay is sometimes sold in the temples. We have received a sample from Bangalore said to have been offered to devotees attending the Nanjangud Temple during the Dasara festival.

Throughout the city of Bombay, a peculiar, partly-burnt clay, blackish externally and white within is sold by petty tradesmen and hawked about in the streets, and is used for edible purposes. The raw clay is not found in Bombay, but is imported and baked by professional bakers called *Chanakurmuriwallas*, who roast gram and rice. It is known by some as *khadi matti*, and is supposed to be a form of limestone, but as will be seen from its analysis it is similar to cimotite.

The best-known material used in Northern India is the grey or drab-coloured shale known as *Multani matti*. This is excavated to a large extent at the village of Meth, near Kolath in Bikanir. Major Pawlett states that from here it is exported to the Panjab at the rate of two thousand camel-loads a year. T. La Touche[1] reporting on the occurrence of coal at Palana village in Bikanir in 1897, states that he found below the coal a band of unctuous clay called *Multani matti* belonging to the nummulitic series, establishing the age of the coal as nummulitic or lower eocene. We have received samples from Baluchistan, Panjab, Baroda and Bengal. Ball mentions that under the name of *Rajmahal matti*, a comestible earth was sold in Calcutta, the precise source of which was not known. We are inclined to believe this article is *Multani matti*, since this has been sent to us from Birbhum. The distribution of *Multani matti* as an earth-eating material extends, at least, from Baroda to Baluchistan and from Baluchistan to Bengal.

Mr. R. Hughes-Buller furnishes the following information on the clays used for eating in Baluchistan: "In Quetta, Nushki, the Bolan Pass, and Nasirabad, the edible clay is bought in the bazar; in Pishin, any clay which does not contain sand is used and the plaster of old walls is preferred; in Chaman the Achakrai women eat the clay deposited by floods which is called *kark*, and in Killa Saifulla, the clay dug out of *karezes* (underground water channels) is also eaten. In other tahsils the clay occurs on the hill

[1] La Touche, *Records, Geological Survey of India*, Vol. XXX, Pt. III, p. 123.

sides. In the Kalat highlands and Las Bela, a clay called *met*, imported from Sind, is eaten, and if this is not obtainable, a local earth known as *karkat* containing salt efflorescence is used. In the Jalawan country in Kalat, lumps of clay are sometimes mixed with salt and burnt in the embers before consumption. The baked clay of the hearth is also sometimes eaten in Las Bela. Indeed the habit of eating burnt clay seems to be widely prevalent." Eleven samples of raw clays were sent by Mr. Hughes-Buller to represent the edible varieties employed in Baluchistan. One of the most interesting was a sample bought in the Quetta bazar, a compact, laminated and fossiliferous clay of a greyish or buff colour; similar deposits were sent from Sibi, Shahrig, Kohlu and Baikhan, and resembled *Multani matti*. A dark reddish-brown clay came from Hindubagh. Samples from Hori and Duki were compact lumps, greyish-blue or slatey in colour. That from Fort Sandeman was a soft, friable clay of a brownish colour. The deposit from Killa Saifulla was in dry nodular masses of a brown colour. From these samples it appears that the earth eaten is generally *met* (*Multani matti*) purchased in the bazar. Burnt (*pakka*) earth is considered less injurious than fresh (*kacha*) earth. Pieces taken off a fireplace are considered *pakka*, and *met* is sometimes burnt and soaked in milk before being eaten. Charcoal and ashes are sometimes used as a substitute for earth. The edible clay of Afghanistan is known as *gil-i-sarshu*.

We are indebted to the Director of the Baroda Museum for sending an interesting series of earths used for edible and medicinal purposes in and around Baroda. Those usually eaten are the *pili matti*, or yellowish-brown earth, *kali matti* or black earth, and *khadi matti*, which is common chalk or carbonate of lime. The former two may be obtained in the district without any difficulty and no value is placed upon them, but the chalk is only obtainable in the bazar. The black earth or clay is hard and compact. It is said that if this earth is baked and a little water poured upon it, it disintegrates and gives off a pleasant odour which is always peculiarly attractive to earth-eaters. There are certain clays used in Baroda for medical treatment, mostly as external applications, and rarely for internal administration. These are *gul-e-armani*, *Multani matti* and *Gopichandan*. These are applied as a paste made with water in cases of inflammatory and glandular swellings. The first two are bought in the bazars, while the third occurs in a small lake called Gopitalao, near Dwarka on the west coast of Gujerat, from which the earth takes its name. *Gopichandan*, which is composed largely of calcium carbonate, is an oblong cake of a yellowish colour, and is used by Hindus in making the *tilak* or religious mark on the forehead (Fig. 6).

The materials of the clay-eaters of Assam are of the usual varied character. In Cachar there are red, blue and black clays; the red being eaten raw, while the blue and black varieties are burnt before eating. Coolie women in this district favour a sticky blue clay, which may be collected in the neighbourhood or bought in a burnt state in the bazar; others prefer a light-red coloured clay. Some earth-eaters prefer burnt earth; but whatever preference they may have at one time for a special kind of mud, as the habit increases the depraved appetite is satisfied with burnt bricks and broken pieces of *kalsais* (pots). Coolies are also disposed to white-ant soil taken from the centre of the nest, and white-ants themselves are included as a delicacy.

In tea estates in Travancore, edible earths are taken by the coolies from the cuttings on roadsides, and from deposits in the soil, from riverbeds and from the forests: in fact suitable clay is procurable everywhere. In the Peermaad tea estates, the coolies as a rule eat red earth forming the subsoil at two feet below the surface of the ground. They have often been seen to pick their earth from a bank or landslip. Some natives given to this habit will eat the black earth in such places where it has been worked upon in damp corners by earth-worms. Others eat earth in a rough state, while some prefer it powdered; they also consume broken bricks and tiles and pieces of new country-made chatties and pots. On these estates it is known that earth-eating people have also a practice of eating decayed wood with relish.

Occasionally, uncommon cravings occur for the ashes of *berattis* (cowdung cakes), and the white ashes used on the forehead by persons of the Saiva sect of Hindus (Madras). Those suffering from depraved appetite in Shencotta, Travancore, also frequently eat charcoal. One planter writes that various clays are used "as well as ashes, charcoal and brickdust." Dr. D'Alwis, Medical Officer, Poonmudi, Travancore, writes: "The eaters go to the length of having the earth prepared into a sort of pancake by mixing with it jaggery, kneading and frying it in gingily or cocoanut oil."

Besides clay, other mineral substances are often resorted to by earth-eaters. Dr. Gupta of Arrah gives the case of a maidservant, Bumihar by caste, of Motihari district, who used to take sand, about six chattaks a day, besides ordinary clay and burnt earth.

But it is astonishing to find what materials are used when some of these usually preferred are not obtainable. In Bengal it is quite common for the yellow clay at the bottom of walls to be eaten. In the Delhi district, certain earths with a salty taste and containing much lime and sodium chloride are generally resorted to. These are specially selected and are baked on the hearth, and the crisp cakes then utilised for eating. Failing these earths, however, recourse is had to chips of large earthen vessels called *mutkas*, also to coal, to pieces of unglazed goblets and plates.

Speaking of the use of salt earths introduces quite a different subject from that of this paper, and their use can only be referred to as occurring commonly in districts where salt is expensive. It is not therefore necessarily a sign of depraved appetite. The same may, in a measure, be said of the uncommon cravings for wood ashes occasionally noted from South India.

The use of earth, besides its inordinate consumption as a habit, is sometimes regarded in the light of a charm, and its ancient magical properties would incline some anthropological students to ascribe its use to this origin.

The earth dug from a grotto in Malta, where St. Paul spent a night, was formerly used for the cure of many ailments. It found a place in the pharmacopœia of the day, and was esteemed a cordial, a sudorific, and a certain remedy for the bites and stings of venomous animals. In the eighteenth century it was sent from Malta made up in little cakes of the form of segments of a cylinder, stamped with the impression of a cherub's head and wings, with the words "Terra sigillata" underneath.[1]

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[1] Hill, *History of the Materia Medica*, p. 206.

Earth from St. Ulric's grave, near Augsburg, endowed with wonderful properties in ancient times,[1] might be entered in the same category.

The dust from the tomb of the Prophet is an auspicious article said to be a cure for every disease. Lane[2] describes the prepared earth, specimens of which were presented to him by a pilgrim from Mecca. They were oblong flat cakes of a kind of greyish earth, each about an inch in length, and stamped with Arabic characters: "In the name of God. Dust of our land (mixed) with the saliva of some of us." These were composed of the earth from over the grave of the Prophet and were sold in the tomb at Mecca. A cake of dust from the Prophet's tomb is sometimes served up in a leather case and worn as an armlet. It is also formed into lumps of the shape and size of a small pear and hung to the railing which surrounds the monument over the grave of a saint.

In various parts of India, this custom of eating small quantities of sacred earth is frequently followed, as it is supposed to have healing properties. The Vaishnavas or followers of the priests of the Vallabhacherya family, who are found all over India, keep in their houses the earth of the sacred river Jumna called *charnamrita*. At the end of the *puja* or daily worship, a pinch of the earth is placed on the tip of the tongue and swallowed. It is considered purifying (Fig. 5).

There is a hill a few miles from Madras, and one particular spot in it is considered sacred, and the earth from this is said to possess miraculous and curative properties. It is the custom for all those who visit the hill on pilgrimage to bring away a handful of the earth and make pills of it to be used for various internal disorders as occasion arises.

The custom of eating small quantities of earth from holy places is prevalent throughout India, and it would be beyond the limits of the subject of this paper to multiply instances of this nature.

A few remarks may be made on the earth and mineral substances in India consumed in times of scarcity and famine, a subject quite different to that of satisfying a depraved appetite when ordinary food is available.

Among such cases we might call attention to the habit of the mountain tribes of Travancore, where the men (not the women) are said to eat the earth of white-ants' nests. The cells of these are constructed of soft, fine earth, which is generally of a reddish-black colour. The people eat this earth with the white-ants inside the cells. They sometimes even eat it with honey. Such earth is not taken, as one would imagine, in small medicinal doses, but in pretty large quantities. No evil effects have been noticed to follow its use.

A similar record relates to the Cussavars, a jungle tribe living on the Segur plateau, Nilgiris, who eat ashes made from the bark of a tree mixed with ripe tamarinds. Both men and women eat this in the form of uncooked dough, called *boothi pulli*, when grain is scarce.

During an investigation into the nature of food-stuffs used in India in times of scarcity and famine, undertaken by the Reporter of Economic Products in 1903, specimens

[1] Brückmann, *Epistolaria Itineraria*, 6 Cant. 1.

[2] *An Account of the Manners and Customs of the Modern Egyptians*, 1846, Vol. II, p. 76.

of stones were sent from various quarters as regular famine foods. These have consisted chiefly of steatite (soapstone), and they came from Rajputana; the names given to them being *Churu bhata* (Jodhpur), *gai bhato*, *gia bhata*, *gheeya bhota* (Jaipur), *palia* (Jaipur), *sangraj* (Bikanir, Ajmere-Merwara). These stones are ground to powder, mixed with *ata* (flour) and made into *chapatis*.

The following samples have been received in connection with the present inquiry. The left-hand column describes the samples, while on the right hand is given the mineralogical characters kindly furnished by Mr. L. L. Fermor of the Geological Survey of India :—

1. Edible clay, "Cherbak," from Manipur, Assam.	Pieces of both olive-grey shale and yellow-ochre-coloured shale. Analysis shows that the piece analysed is a mixture of sand and clay.
2. Red clay from Hatticherra, Cachar	Clay, varigated in white, buff, reddish tints.
3. Blue clay from Hatticherra, Cachar (through Mr. H. M. Crozier)	Pale ash-grey clay with light-brown mottlings.
4. Black clay from Hatticherra, Cachar (through Mr. H. M. Crozier)	Buff-coloured clay with blackish-brown manganiferous, fibres along cracks.
5. Whitish clay from Jorhat, Assam ...	Greyish-white clay.
6. Red clay from Jorhat, Assam ...	Creamy-grey clay with pale ferruginous spots.
7. Yellow clay from Suffry, Assam ...	Buff-coloured gritty clay.
	The analyses show that all the above, and also Nos. 10 11, 13, 15, 16, 19 below, although they look like typical clays or shales, are really mixtures of some clay-forming hydrated aluminum silicate such as kaolin, with free silica, probably as quartz. The quartz must sometimes be so finely divided that it does not diminish the softness of the clay, while at other times the grains of quartz are sufficiently large to cause the clay to feel gritty when rubbed in a mortar. The alkalis shown by analysis were probably present either as finely divided felspar or as very minute scales of such micas as muscovite or paragonite.
8. Brown earth from white-ant nests, Sylee, Duars. ...	Yellowish-brown earth from ant-hill.
9. Black earth from white-ant nests, Sylee, Duars. ...	Dark-brown earth from ant-hill.
10. Raw clay from Bibirhat near Chittagong, through Mr. R. L. Heinig.	Darkish-grey clay with black spots and minute mica scales.
11. Baked plate sold in Chittagong bazar ...	Judging from analysis, was a mixture of sand and clay before burning.
12. Baked clay from the Hoogly District ...	Pale chocolate micaceous clay.
13. "Patkhola" from Calcutta bazar ...	See 11.
14. Edible stone (*Multani matti*) from Manbhum	Cream-coloured shale. Judging from analysis, this rock must be a mixture of sand and clay with some alkali-felspar or mica in a state of very fine division.
15. *Kali matti*, black edible earth, from Baroda...	Blackish-grey clay.
16. *Pili matti*, yellow edible earth, from Baroda...	Reddish micaceous loam.
17. *Gopichandan*, the earth of a small lake called Gopi Talao near Dwarka (from Baroda). ...	Analysis shows this to be a mixture of sand, clay and calcium carbonate, *i.e.*, a marl.

18. Charnamrita, earth of river Jumna made into boluses with water of the Ganges (from Baroda).	Analysis indicates a slightly calcareous mixture of sand and clay.
19. Multani mati from Baroda	A buff-coloured slatey shale with thin veins of manganese oxide.
20. Burnt earth from Nala bazar, Bombay city, through Honorary Secretary, Anthropological Society.	A cream-coloured clay in pieces which are coated black outside. It crumbles to pieces almost at once when put in water. Analysis is very close to that for cimolite, which this clay probably is.
21. Burnt earth from Bhendi-bazar, Bombay city.	Very similar to 20.
22. Edible earth from Hassan, Mysore, through Mr. J. Cameron, Bangalore.	A red lateritic clay with black stains of manganese oxide.
23. Red edible earth from Mysore	Red-brown ochreous clay.
24. Ball of white clay from Ootacamund ...	White clay in balls.
25. White sticks of edible clay from Madras, through the Chemical Examiner, Madras.	Soft-white sticks which the analysis indicates to be hydrated silica. It might possibly be used for the same purposes as tripolite.
26. Grey sticks of edible clay from Madras ...	Sticks of dark liver-brown clay which must be a mixture of clay and sand and contains abundance of alkalis.
27. Edible clay from Asamboo, Travancore ...	Friable creamy-white rock. Evidently hydrated silica.
28. White edible earth from Poonmudi, Travancore, through Mr. J. S. Valentine.	Pinkish-buff lateritic clay containing a few little specks of halloysite, which the whole rock approaches in composition.
29. White edible earth from Poonmudi, Travancore	A few fragments of variegated laterite, which is largely halloysite.
30. White edible earth from Poonmudi, Travancore	Pale micaceous lateritic, clay probably approaching halloysite in composition. Analysis indicates mixture of hydrated silica and clay.
31. Edible earth from Hindubagh, Baluchistan ...	An unctuous darkish grey calcareous clay.
32. Edible earth sold in Quetta bazar ...	Cream-coloured shale with shell impressions and some thin black veinlets of manganese oxide. Analysis shows it to be a mixture of sand and clay, the former predominating.

The following samples were also received but were not chemically examined :—

33. Clay from tea estate of Mr. G. Romilly, Meppadi, Wynaad, through Mr. E. Thurston, Madras.	Ferruginous variety of halloysite.
34. Sample from Shahrig, Baluchistan ...	Pale greyish-buff marl.
35. Sample from Kohlu, Baluchistan ...	Pale-grey unctuous shaley clay.
36. Sample from Killa Saifulla, Baluchistan ...	Pale-creamy sandy micaceous clay.
37 Sample from Baikhan, Baluchistan ...	Pale-grey unctuous shaley clay.
38. Sample from Sinjawi, Baluchistan ...	Pale-grey unctuous shaley clay.
39. Sample from Fort Sandeman, Baluchistan ...	Greyish calcareous clay.
40. "Palia" stone from Rajputana, eaten in times of famine.	Talc-schist ? Magnesia is present in abundance. Both samples emit a very peculiar odour when broken. Without analysis it cannot be certainly settled whether this is talc or chlorite-schist.
41. Edible clay from Arrah, Bengal, through Dr. R. K. Gupta.	Dark-buff clay with minute scales of white mica.

	1 Manipur.	2 Cachar, red.	3 Cachar, blue.	4 Cachar, black.	5 Jorhat, white.	6 Jorhat, red.	7 Suffry.	8 Sylee Duars, brown.	9 Sylee Duars, black.	10 Chittagong, raw.	11 Chittagong, burnt.	12 Hooghly.	13 Calcutta.	14 Manbhum.	15 Baroda, black.	16 Baroda, yellow.
*Loss on ignition ...	6·16	4·12	5·50	3·65	5·18	4·80	5·54	9·56	8·65	6·84	1·92	3·95	1·75	9·60	9·80	4·14
Silica	76·05	79·92	79·08	84·27	80·04	80·77	76·13	66·04	77·21	74·88	81·43	74·60	81·60	69·68	69·84	84·20
Ferric Oxide ...	7·46	7·57	6·87	3·91	3·30	5·98	7·67	7·85	4·95	4·20	5·63	8·89	6·69	6·54	6·87	4·49
Alumina	8·57	7·35	7·45	7·21	9·44	6·84	9·09	14·06	6·64	12·12	8·48	10·23	6·43	8·08	10·67	3·99
Lime	·02	·04	·07	·04	·26	·17	·09	·35	·35	·26	·31	·56	·57	1·18	1·39	1·48
Magnesia ...	·88	·20	·03	·24	·79	·59	·40	·60	·84	·77	1·03	·30	·32	·87	·40	·80
Potash	·43	·43	·55	·36	·48	·33	·49	·71	·61	·31	·49	·76	1·08	1·44	·38	·38
Soda	·25	·26	·33	·22	·36	·37	·43	·55	·53	·58	·59	·52	·69	2·29	·50	·34
Sulphuric acid ...	·07	·05	·05	·03	·11	·08	·11	·14	·10	·03	·08	·11	·79	·27	·11	·14
Phosphoric anhydride	·11	·06	·07	·07	·04	·07	·05	·14	·12	·01	·04	·08	·08	·05	·04	·04
Total ...	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
*Containing Nitrogen	·11	·09	0·8	·06	·08	·09	·09	·11	·14	·15	·11	·07	·04	·10	·10	·08

	17 Gopichandan.	18 Charnamrita.	19 Multanimati.	20 Bombay, No. 1.	21 Bombay, No. 2.	22 Mysore, black.	23 Mysore, red.	24 Ootacamund.	25 Madras, white.	26 Madras, grey.	27 Asambu, Travan.	28 Poonmadi, No. 1.	29 Poonmadi, No. 2.	30 Poonmadi, No. 3.	31 Hindu, bagh.	32 Quetta.
*Loss on ignition ...	7·57	8·13	8·58	9·83	8·34	12·40	11·47	9·63	10·44	6·78	7·09	12·29	12·98	13·40	3·26	6·73
Silica	22·45	55·80	74·54	63·94	65·17	46·45	57·64	71·66	83·93	70·00	89·71	46·92	49·93	76·16	65·64	78·47
Feric oxide ...	2·80	14·34	3·63	3·41	3·73	20·90	14·15	2·71	1·30	6·12	·02	13·31	9·85	3·24	6·02	3·79
Alumina	4·15	19·16	7·97	21·72	21·67	19·07	15·65	4·94	2·40	12·02	2·76	26·81	26·76	6·72	12·10	6·71
Lime	61·35 (as Ca CO3).	1·20	1·35	·19	·14	·23	·32	5·78	·90	1·07	·06	·16	·09	·10	8·47 (as Ca CO3).	·62
Magnesia ...	·51	·57	·90	·21	·12	·38	·29	1·54	·47	·59	·12	·17	·09	·09	3·60	1·08
Potash	·37	·08	1·40	·06	·07	·08	·33	·88	·09	1·28	·01	·08	·06	·03	·19	·52
Soda	·64	·49	1·27	·39	·52	·25	·11	1·01	·31	1·72	·05	·04	·10	·05	65	·88
Sulphuric acid ...	·11	·11	·32	·20	·20	·11	·03	·06	·14	·38	·15	·14	·11	·17	·03	1·13
Phosphoric anhydride	·05	·12	·04	·05	·04	·13	·01	1·79	·02	·04	·03	·08	·03	·04	·04	·07
Total ...	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
*Containing Nitrogen	·10	·09	·14	·02	·02	·09	·06	·23	·02	·04	·01	·04	·03	·03	·08	·13

42. Edible clay from Shillong, Assam	...	A greyish-white porcellaneous clay probably halloysite and banded with brown, pink and purplish bands. Contains also a few minute scales of white mica. Specific Gravity 2·25.
43. Comestible clay from the district of the fort de Cock, near Padang, Malay Peninsula, through Rev. E. Francotte, S.J.		Lithomargic clay.

IV. The Habit of Earth-Eating.

Earth-eating is a secret habit and those addicted to it rarely own to it, and there is great difficulty in obtaining reliable information on the subject. But the prevalence of the habit throughout India has rendered it possible to bring together, through the assistance of observers in town and country, a number of details and some general conclusions regarding it.

The reasons given for indulging in the habit are classified under the following heads:—(1) A peculiar fascinating odour and taste in the clay, rendering it a delicacy. (2) An unnatural craving due to disease. (3) To satisfy hunger. (4) The force of example. (5) The supposed medicinal virtues.

1. It has been expressed by more than one of our correspondents that there is something in the particular kind of earth that entices people to it. The odour and taste are so alluring to the senses that persons cannot resist the temptation of eating it.

An earth-eater in Madras, a graduate in arts, confessed to a friend that the bland, earthy odour was a great temptation to him, and the thought of it made his mouth water. He always enjoyed the odour when April showers fell upon previously parched earth. It is this odour which made him take to eating the earth. "Sometimes," his friend writes, "he could not overcome the desire. He had been anæmic and had suffered from constipation, dyspepsia and headache of the nature of hemicrania. For several days he would go without it, but suddenly the craving would seize him and he would be forced to eat it to satisfy the same, in spite of his knowledge of the injurious consequences that would inevitably follow."

There are some forms of black earth which, if burnt and then water poured on, will give off a pleasant odour which is peculiarly attractive to earth-eaters. *Lapis odorata* was known in ancient times, some varieties having the odour of violets, others of spring flowers; it was eaten as a luxury.

Among children the salty nature of the ingredients of some of these earths is the recommendation for their use. This, however, can be the reason in but few cases of the habit as we are now dealing with it.

2. The unnatural craving due to disease seems to be the chief cause of this habit in the East. Hysteria prevails in young women when the generic organs are affected, and the periods of menstruation and pregnancy are usually attended by delicate nervous changes and perversion of instincts. Among the Tamil coolies in Travancore the women and children eat a considerable quantity of earth a day. They carry it in their waist-cloths and eat it while they are at work in the estates. They often deny the fact of taking it, but cases of women cutting the clay for eating are so numerous that it is

impossible to conceal it. When these have been questioned they say they are so strongly tempted to eat that they cannot do without it, although they fully realise the danger it entails. Some women, however, evasively reply that they experience no ill effects whatever. The uncontrollable craving for this is like the opium or alcohol habit, and the ravenous symptoms and anxiety in the faces and actions of the eaters are similar to those found in the devotees of one or other of these vices.

Among married women the habit is almost confined to the period of pregnancy, but a few women indulge it at other times also. In Baluchistan clays are eaten during the first four months. In the coal-mining districts of Bengal between the sixth and eighth month. In Delhi it is reported to be used in the later months.

The amount eaten per day varies with different individuals. "It is eaten by women in small quantities of an ounce or so at a time, but men eat it in larger quantities; half or three quarters of a pound seems to be enjoyed by some healthy men." (Delhi). "It appears not unusual for a woman to eat as much as a quarter to half a pound a day. (Hughes-Buller, Baluchistan). "One female will swallow as much three chittacks (6 oz.) of clay per day from the mines." (J. Grundy, Inspector of Mines, Bengal.) "Coolie women on the Cochin Hills eat it in large quantities of 1 or $1\frac{1}{2}$ pounds." (T. H. Welchman.[1])

Reports are almost unanimous in stating that the habit when indulged in causes anæmia. Cases of intense anæmia are recorded with the history that the patients were perfectly well until they took to mud-eating. It is, however, almost certain that anæmia gives rise to the habit, and most probable that the habit is both the cause and the consequence of anæmia. Clay is eaten by people who are already anæmic, and the more they eat it the more anæmic they become.

Earth-eaters are frequently troubled by worms, but whether they are caused by earth-eating, or their presence is a contributary cause of the habit, is not quite decided. The most general idea, among medical men who have had to deal with large numbers of cases is that to anæmia, accompanied by morbid gastric sensations, is most often due to the commencement of the habit. The anæmia due to the anchylostoma[2] worm is particularly accompanied by gastric cravings. One might compare the depraved appetites of pregnant women suffering from gastric ulcer.

Dr. Brooks (Sylhet) says it may or may not cause anchylostomiasis, of which anæmia is, in his districts, nearly always a symptom. The habit is frequently a symptom not a cause in amenorrhœa and dysmenorrhæa. The presence of anchylostoma duodenale in the intestine seems invariably connected with the earth-eating habit in Bengal.

Coolie children of both sexes suffer almost universally from ascaris, but this is probably due to their eating soil near houses, which is contaminated by the ova of ascarides, whereas the clay eaten by pregnant women and anæmics is usually dug well below the surface and is probably free from all organic contamination of an infectious character such as fæces and intestinal parasites.

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[1] *Bulletin of the Madras Government Museum*, Vol. IV., No. 2, 120.

[2] *Anchylostoma duodenale*, a Nematode worm found in the upper part of the small intestine of man.

The evil effect on the health of children of acquiring the habit is quite recognised by the parents, and they have frequently much trouble in watching their children in order to prevent them from acquiring it. Some parents take special precautious to prevent their children acquiring the habit, and, if they happen to do so, amulets or charms are obtained from a *mulla* or *saiad* and are said to cure it. In Calcutta a careful mother will place *nim* (*Melia indica*) leaves, which are bitter, on the earth near the house to prevent the children from using the mud. Children left to themselves easily fall into the custom of eating mud and filth of all kinds, and as they grow older invent ingenious methods for storing it which escape most vigilant detection. The habit amongst children is said not to be retained after ten or twelve years. Early marriage is regarded by some as a cure for the craving, but there is evidence that with women sometimes the marriage state inaugurates the trouble.

The custom is occasionally found among boys who, as usual, practise it in secrecy and use strange methods to satisfy their cravings. A case is related of a student in Madras, a Vishava Brahmin, who acquired the habit of eating the sectarial mark of white earth on his forehead. On the mark drying he would seek an early opportunity to retire, and when alone he removed and ate the clay. He became very anæmic and sallow, and dyspepsia was his constant complaint.

The effects of the habit are disastrous. Those women addicted to it after a short time, often within a year, complain first of pain and weakness in the limbs, palpitation and difficulty of walking a little distance up hill, and after some time all the other symptoms of anæmia are fully established; sallow and pale complexion, tongue, gums, and conjunctiva quite pale and bloodless, weakness of the abdomen and general debility. Very often dropsy supervenes.

In the worst cases they become swollen in the face and body; they are unable to pass urine without medical aid; they also suffer from constipation, disorders of the liver, stone (*pathri*), sometimes jaundice, and rheumatism; they refuse all other food, and drink only water. Another medical opinion given to us indicates that the habit causes chronic dyspepsia, enteritis and slow death from destruction of the absorbing surface of the intestine. Still another states that dysentery is very common among earth-eaters and is of a type usually fatal. It is also said that persons addicted to the habit are particularly liable to disease; they seem to have no power to resist diseases and die very easily.

A medical officer of a Tea Estate in Travancore says the habit causes anæmia and dropsy followed by dysentery and generally debility. The peculiar sickness is called *mun shoga* (mud-anæmia), and although they are fully aware of the cause the coolies continue the habit.

It has been found in famine districts that when people take to earth-eating to allay the pangs of hunger, it is often followed by disastrous consequences. Colonel Adams says that when used in excess it gives rise to malnutrition, emaciation, bowel disease, swollen feet and other signs of starvation. Clay may, therefore, minimise the cramps of hunger for a time, but it stops the peristaltic action of the stomach, produces diarrhœa and dysentery and consequently death.

There is no suitable cure for this habit except restraining those addicted to it from the

use of all earth. It has been said that the natives endeavour to stop the practice by administering castor-oil and other aperients to the earth-eaters, but this does not prevent them from eating more as soon as an opportunity occurs. A planter in Assam almost completely suppressed the habit on his estate by making the offenders stand out with a piece of mud in each hand exposed to the ridicule of the rest of the coolies.

The earth-eating habit, like some other diseases, appears and disappears in some localities like an epidemic. There are records of the prevailing habit in tea-gardens where it was not known before. An instance is given that it was practically unknown in Hailakandi District, Cachar, before 1888, but now it is of frequent occurrence. On the other hand, we are told that in certain localities it has almost entirely disappeared. In illustration of this we have been informed that earth-eaters are much more scarce than formerly in the Chittagong Estates, and that the habit was much more prevalent among the Parsi women in Bombay about twenty years ago than it is now.

3. With many people in India clay is a recognised article of food, and hunger often leads to excessive consumption. In the desert region of Rajputana, ashes, clay, mud and powdered soapstone are eaten in times of scarcity and famine. It is often use to give bulk to the meagre meal of the bark, leaves or roots of trees. When finely ground and used in proportions of about one-fourth to three-fourths of flour it does not apparently impair digestion for a considerable time. Fakirs and mendicants are said to eat clay from genuine hunger. Possibly among the coolies on tea and other estates, clay may be taken in the first instance to keep off hunger between meals, but it very rapidly develops into a habit from this cause. There is no scarcity of food in many places where the habit is ripe, for dried fish, vegetables besides different kinds of yams and fresh meat for those whose caste permits them to eat it, are obtainable all the year round. As the habit grows all desire for natural food dies out and the craving for clay increases. A young *Cangani* or maistry who supplied labour to a tea estate in Travancore, who was himself an inveterate earth-eater, was asked why he took this habit. His reply was, "We eat earth or clay because it keeps off hunger, and because it tastes like biscuits." This man died of lung disease at 30 years of age.

We cannot help coming to the conclusion that where the habit exists among men it has been induced, sometimes at any rate, by the long intervals occurring between the taking of ordinary food.

4. In a few cases the earth-eating habit is acquired entirely as the result of imitation. Among certain classes of women, it would almost seem infectious. One planter in Assam has noted that a new coolie is never seen to practice the habit, but in time if the subject is weak-minded or not of robust health, she easily contracts the habit. Some women on being asked why they ate mud replied that they thought it would do them good and because "other women did it," but it was not a *dastur* or custom in their own country.

V. Medicinal use of Earth.

During the course of this enquiry we have noticed many references to the medical action of clay in India, and the supposed virtues of this remedy have, on more than one

occasion, been given as a cause or excuse for the clay-eating habit. Some regard it as a comforting and stimulating agent, others believe that it relieves acidity and heartburn attending pregnancy, others look upon it as a relief or cure for monthly sickness. Owing to the unfounded supposition that it contains salts of alkalis and alkaline earths, clay is said to be useful in gastritis and pregnancy where these salts are generally wanting in the blood. In children and pregnant women there is a call on the tissues for excessive bone formation, and during these periods this produces an inordinate desire for calcareous mineral diet. As will be seen from our analyses of these earths, there is no evidence of the presence of free alkalis and alkaline earths (except lime in a very few cases), and hence any medicinal effect of the character suggested is extremely improbable.

In Baluchistan, earth-eating is supposed to render confinement easier, and in Las Bela it is considered to absorb the fluids during pregnancy which, at other periods, are discharged from the body. This, however, does not seem to be the general opinion, and far from assisting confinement, it makes it more laborious owing to the absorption of the fluids which ordinarily render childbirth easy.

Whatever real benefit may be derived from eating small quantities of clays and earth, it is a fact that the remedy often becomes a confirmed habit as we have previously described, and from small doses excessive amounts are taken which can only have one result—premature death.

In order to make this part of the subject complete, a few references are made to the use of clay in Eastern Materia Medica, and a few selections are given from some recent numbers of the *British Medical Journal* on the use of clay in European practice.

In Bhagvat Singhjee's[1] work of Indian medicine the following remarks occur. On page 134: "The minerals used in medicine by the Hindus include metals, rasas, salt, precious stones, clay, etc." And again on page 136: "Certain kinds of sand and clay are in common use as healing agents such as *khatika* (calcium carbonate), *kardama* (hydrous silicate of alumina), *gopichandana* (silicate of alumina) *sikata* (silica), etc."

Irvine says,[2] "*Multani mitti*, a kind of light yellow ochre, is taken in dyspepsia in doses from 5 to 30 grains."

Sakharam Arjun[3] enumerates the following medicinal clays:—

Silicate of Alumina—*Gopichandana* Marathi, *Panisoka*, Marathi.—These are varieties of clay. The former is used as a cooling application in headache and to inflamed parts, and the latter from its absorbent properties to dry wounds and ulcers, on the erroneous supposition that drying promotes the healing of wounds.

Silicate of Alumina with Lime and Iron—*Sang-i-Basri*, Persian.—This is generally imported from Bassorah and the Persian Gulf, as its name implies. It is used in tonic preparations, and in irregular menses, and with benefit from the iron it contains.

Silicate of Alumina—Porous. *Mulatani matti*, Hindi.—It is eaten by pregnant females to relieve acidity of the stomach, and is given mixed with sugar in cases of leucorrhœa.

Dr. Ferojdin Mohroof informs us that *Multani mitti* is eaten in Delhi for chronic

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[1] *A Short History of Aryan Medical Science*, 1896. [2] *Materia Medica of Patna*, p. 66. [3] *Bombay Drugs*, p. 166.

inflammation of the stomach and acid hydrochloricima. It is also used in some cases of chronic diarrhœa.

U. C. Dutt,[1] after describing *geru mati*, *gairika* and other earths occasionally used in medicine, refers to a sweet-scented earth brought from Surat, and called *saurastra mrittika*, regarded as an astringent and useful in hœmorrhages. It enters into the composition of several medicines for relieving bleeding from internal organs.

In the Treatise of Simples[2] by El-Baitar, the well-known botanist of Malaga who lived in the 13th century, there are given the names and properties of nine kinds of medicinal clay. These are :—

Thin makhtoum	...	...	Sigillated earth.
Thin mesr	...	...	Egyptian earth.
Thin chamos	...	...	Earth of Samos.
Thin djeziret el-maxsiki	...	...	Earth of Chios.
Thin kimolya	...	...	Cimolean earth.
Thin kemy	...	...	Earth (ashes) of vines.
Thin horr	...	...	Pure clay.
Thin armeny	...	...	Armenian earth.

Under *Thin nisabourry* or "earth of Nisabur," he says :—

"This is the comestible earth.—THABAT IBN MUHAMMAD. The earth of Nisabour is white, of an agreeable taste and is eaten raw or baked. It is one of the pure clays. It is very white like that of white lead. It is sweet to the taste and sticks to the lips on account of its great softness. Its taste is somewhat saline. Placed on the fire, this earth loses its saline taste and becomes sweet. Some people beat and mix it with rose-water with a little camphor to make a preparation of the form of loaves or tablets or different shapes. Others work it up with musk, camphor-water and aromatic substances. Then they take some of this after wine to perfume the breath and calm the burning of the stomach. MUHAMMAD IBN ZAKARIYA (Razi)[3] says that the comestible earth is cold. It strengthens the heart and relieves nausea. The same account in his *Treatise on Correctives of Foods* declares that the earth of Nisabour suppresses sickness and corrects nausea provoked by sweet and fatty food. To effect this, one takes a small quantity after food, preferably prepared with soda, rose, lemon-grass souchets, cubebs and cardamoms. For my part I think the usage of this earth has not the disadvantage of producing obstructions in the kidney and the bladder, as happens with other clays; it is necessary to employ that which is burnt, which does not break easily, and does not agglutinate in contact with the saliva. One should abstain from administering clay to subjects whose liver passages are weak, to those whose kidneys are liable to the formation of calculi, or with subjects who appear emaciated and unhealthy and the complexion pale and livid. The same, in his Treatise of Clays, says that the earth of Nisabour has the property of strengthening the heart. It is a suitable remedy for nausea and choleric affections with those who are accustomed to reject their food, with those who have weak stomachs, with those who salivate freely during their sleep, with those who are affected by violent hunger concurrently with looseness of the bowels. It is with this medicine that I have cured an individual taken by a very serious choleric affection, its gravity indicated by violent and persistent vomiting and the commencement of cramps. I feared for his life, on account of the inefficacy of the grains of paradise and pastilles of agallocha and other means of that kind such as drinks, remedies and foods capable of calming the excessive vomiting. I administered to him in the form of powder a dose of 30 drams (1,800 grs., 4·13 ounces) and thrice repeated this, twice in a decoction of sweet apples and once in a decoction of lemon or ginger grass; nausea and indigestion were at once relieved.

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[1] *Materia Medica of the Hindus*, p. 96. [2] Translated by L. LeClerc, Paris, 1881, pp. 421-427. [3] Died 923 or 932 A.D.

What is more marvellous is that the patient found himself stronger and brighter as if the medicine had nourished him. I have likewise employed this medicine in the treatment of affections of the stomach, in nausea and indigestion which followed the taking of food, and saw that it was necessary to administer a small quantity after each meal, which relieved the indigestion, chills of the stomach and the tendency to vomit and to facilitate descent of food to the lower part of the bowels. Its use strengthens the upper parts of the stomach, dries it quickly and relieves pain and nausea. I consider it a capital remedy for the treatment of the affection of the stomach specially with people where there is no appearance of obstruction of the liver or contraction of the intestine. In these cases this remedy is rarely harmful, and the body seems to acquire stoutness. I have given it also to those persons who suffer from excessive secretion of saliva and to all patients affected by violent hunger; all have been radically cured."

From our enquiries it appears that clays for the most part used in medicine are usually administered locally, rarely internally. *Gul-i-Armani*, *Multani matti*, and *Gopichandana* are applied in a paste made with water in cases of inflammatory and glandular swellings, and clay is used externally in Madras for eczema and herpes.

According to S. C. Mitra, of Bihar, a kind of yellow ochreous earth, called in Hindi *peori mitti*, is mashed with hailstones into a paste, which, after being dried, is preserved carefully as a medicine. A little of this paste is rubbed over the chest of patients suffering with cholera. It is supposed to allay burning sensations and cool the whole system.

The matter of the medicinal use of earth has recently been revived in England and has formed the subject of correspondence in the *British Medical Journal*.[1] The case was recorded of a cure of piles from taking clay. The patient swallowed a bolus of about 1 drachm of yellow clay, and next day he expressed himself as well. There was no abdominal pain, no diarrhœa, no blood, no heat or pain in the rectum. The patient declared that it was an old and common cure and was always successful.

In a further letter, reference was made to the fact that Hahneman (*Chronic Diseases*, Vol. II.) was the first to test alumina (or argilla) physiologically, and he demonostrated that amongst other properties it had a very decided action on the rectum and anus, producing constipation and symptoms of piles, which have provided homeopaths with indications for its use in these affections ever since. Therefore, 'clay pills' as a remedy for piles do not constitute a strange phenomenon to homeopaths.[2]

The general opinion appeared to be that its action is purely mechanical and analogous to that of bismuth. The effect attributed to it—removal of pain, diarrhœa, &c.—is quite possible, and solely due to the excessively fine state of division of the particles. It was also stated that in Norfolk and Birmingham, fuller's earth was used for the same purpose.

A most important and quite recent reference to the use of clay is as a remedy for Asiatic cholera. Powdered clay is put forward by J. Stumpf,[3] who declares that if given in large doses—70 to 100 grams for an adult, 30 grams. for a child, or 10 to 15 grams. for an infant—clay administered upon an empty stomach is capable of affording

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[1] *Brit. Med. Journ.* September 9th, 16th and 23rd, 1905, p. 616, 688, and 760.

[2] It is curious to note that one of the writers was recently informed by a Bengali gentleman that he was in the habit of using clay himself as a remedy for piles.

[3] In the *Berl. Klin. Woch.* per *Apoteker Zeitung*, 1905, p. 750.

great relief; the fever, when present, is rapidly abated and the patient falls asleep—in fact, he may have to be wakened to renew the treatment, the above mentioned quantities being divided into small doses administered in water at short intervals extending over 20 to 30 minutes. A *sine quâ non* is the most rigid exclusion of food and also alcohol for 18 to 24 hours before the clay treatment is commenced.

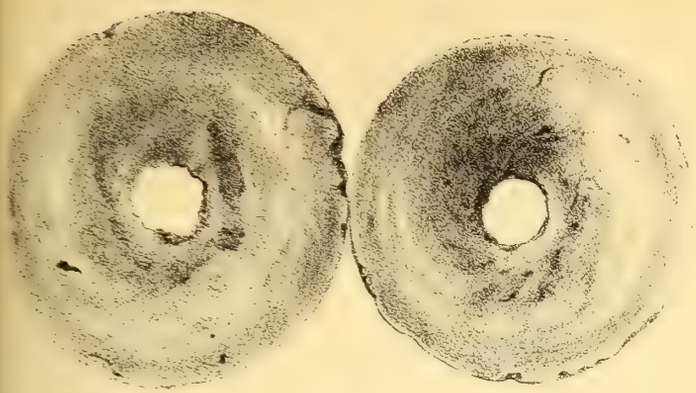
VI. General Summary.

Taking all the facts which we have gathered together on the subject of earth-eating and the earth-eating habit in India, it is possible to reach some very definite conclusions.

In the first place it seems certain that earth-eating by women is not a racial characteristic, that it is determined by no ethnological boundaries, that, equally outside India as in the country, it is occasionally found among almost every class and race of people. In this country it extends throughout the length and breadth of the land; it is common on the boundary of Baluchistan and is also found in Assam and Manipur near the North-East frontier; it is known and practised among the jungle tribes of Chota Nagpur and also by the high-caste Hindus of Bengal and the Muhammadans of the Panjab; the Kolarian, Dravidian, Indo-Aryan and Mongolian peoples all indulge in the habit of earth-eating. This universal practice points to a deeper-seated cause for the habit than any ethnological or national distinction. The materials used confirm this position. Certain forms of earth are certainly preferred, and these preferred forms are sold in the bazaars all over India. Some are burnt before use (*Patkholas*, etc.); some are sold and used in the raw condition (*Multani mitti*). But in the absence of these prepared forms, the people turn to the most diverse material to satisfy the desire. Clays, shales, alluvial muds, even sandy soils are all used when once the habit is established. Luckily, and perhaps by reason of past experience, the material is usually dug out from well below the surface of the soil, and thus infections otherwise inevitable are usually avoided.

What then is the cause of such a widespread habit, and one which, it seems, must be satisfied when once indulgence has commenced? We are inclined to attribute it primarily to the purely mechanical effect it seems to have in comforting gastric or intestinal irritation. This may or may not be due to disease; if it is so due, the result is quickly to aggravate the disease it is taken to alleviate; if not, it rapidly produces effects which bring on disease. Gastric or similar irritation is inseparable from certain periods in a woman's life, and these are precisely the periods when the earth-eating habit is contracted. Once indulged in, the wish for similar alleviation becomes a craving, and the habit, as is usually the case with similar ones, strengthens itself, and brings on disease of the digestive canal. In the cases where men indulge, probably the habit has some similar origin.

Such is the habit as we have considered it. The use of clay as food in time of famine, or as a medicine is hardly essential to the present subject, but we believe that in the above explanation will be found the cause of a habit which overspreads all countries and breaks ethnological boundaries of every sort.



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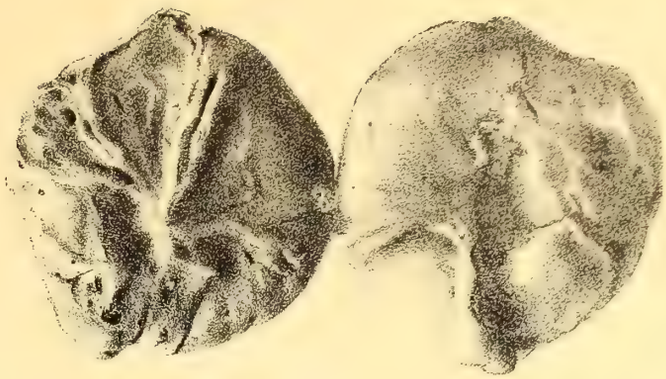

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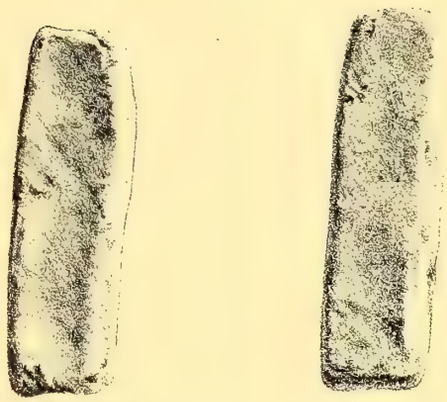

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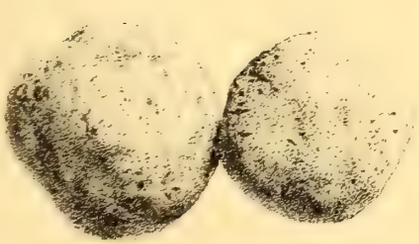

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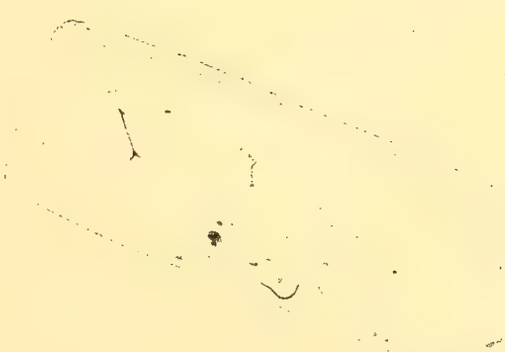

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

VOL. I, No. 18, pp. 271–276.

A CUP-MARK INSCRIPTION IN THE CHUMBI VALLEY.

BY

E. H. C. WALSH, I.C.S.

(WITH ONE PLATE.)

Smithsonian Institution,
OCT 12 1906
National Museum.

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A Cup-Mark Inscription in the Chumbi Valley.

(With one plate.)

By E. H. C. Walsh, I.C.S.

[Read March 7th, 1906.]

The inscription (Pl. XIII, figs. 1, 2) which forms the subject of the present paper is cut on a rock on the west bank of the Ammo-Chhu River in the Chumbi Valley. Its interest lies in the fact that it proves the existence of cup-mark inscriptions in a part of the world in which they have not been hitherto known to exist, that it forms a link between similar inscriptions on rocks in Kumaon and those which are reported to exist in the valley of the Ho River in China, and that its situation bears out the theory put forward by Mr. Rivett Carnac,[1] that such inscriptions may be expected to be found in the oldest and most frequented passes used from time immemorial by advancing tribes; and that it would thus show that in very early ages intercourse took place between Bhutan and Tibet by means of the Chumbi Valley.

Before describing the inscription, a few remarks on cup marks in general may not be out of place.

Cup marks, by which are meant incised hollowed-out circular depressions resembling cups, are found on the surfaces of rocks, monoliths and tumuli throughout every country of Europe, and also in America and many other parts of the world. They are generally shallow and vary from an inch in diameter to three inches, and occasionally more. Sometimes the marks found on a particular rock or monolith are of uniform size and sometimes of two sizes, a larger and a smaller. In some cases the cup is surrounded by one or more rings cut in the stone round it, and these rings again are, in some cases, intersected by a straight line running through them from the cups in the centre. In other examples the surrounding ring is left open so as not to cut this line from the central cup, and the open ends of the ring are deflected parallel to this line from the cup. These last examples would appear from the apparent evolution of this form from the one previously noticed, to be of a later date. In some cases two or more simple cup marks are found united by straight lines cut in the rock between them. The above-mentioned forms are the typical forms of cup marks, though some other combinations are also found in some cases, in what would appear to be later examples.

The subject of cup marks was first studied by Sir J. Y. Simpson, who gave the results of his investigations in a paper which he read before the Society of Antiquaries of Scotland in 1864, and, subsequently, published in an enlarged form in his "British Archaic Sculpturings."[2] The examples of cup marks which had then been noticed were chiefly

[1] *Journ. Roy. Asiat. Soc.*, 1903, p. 523.

[2] *British Archaic Sculpturings of Cups, Circles, etc.*, by Sir J. Y. Simpson. Edinburgh: Edmonston and Douglas, 1867.

in various parts of Scotland and in other parts of the British Isles, in the Isle of Man, the Channel Islands and Brittany. It was consequently at that time considered that they were a Celtic form of ornamentation; and Professor Nilson, the Swedish Archæologist, put forward the theory that they were due to Phœnician influence and connected with solar worship. This theory, however, besides being untenable on other grounds, was soon disproved by the discovery of such marks on rocks in various parts of Europe, and marks of this character have now been found widely distributed in various countries throughout the world.

Their existence in India was first noticed by Mr. Rivett Carnac in 1870, who pointed out the existence of such marks on tumuli in Central India,[1] and subsequently on rocks in Kumaon[2] and suggested that they might possibly represent a primitive form of writing, analogous to the long and short marks used as a form of expression in the Morse Code of telegraphy. He has since further developed the theory[3] that these cup marks are a very ancient form of writing, and that the accompanying circles, where they also are found, are the symbols of the faith of those by whom these inscriptions were made. By the term "writing" he means that the marks were ideographs used when the material for record was limited to stone and long before the discovery of an alphabetical system, and that they were analogous, as a form of expression, to the signals by means of balls or cones that are hoisted in different combinations to convey information to mariners.

As Mr. Rivett Carnac pointed out, the Kumaon markings and many others show a methodical arrangement which militates against the theory of ornamentation or accidental grouping. The same feature is found in the markings of the Chumbi Valley inscription, which, in the arrangement of double lines of cups, bears a close resemblance to those on the Kumaon rocks.

The papers of Mr. Rivett Carnac on these markings in Central India and Kumaon suggested to Professor Douglas[4] the probability that similar cup marks formed the foundation of the diagrams upon which the "Book of Changes" (*Yh king*), the oldest book in the Chinese language, is said to have been based. The question is fully discussed in a paper read by Mr. Rivett Carnac[5] before the Royal Asiatic Society.

According to Chinese Tradition, the discovery of writing was made by the Emperor Fuh-he (2852–2737 B.C.) from a rough system which had been already worked out by a "tribe of troglodytes," an alien nomad people, who inscribed on the rocks as a form of record certain round, starlike marks, the "map of the Ho River." Fuh-he carried away with him the secret of this system by copying or scratching it on a tortoise shell, and this shell, long since lost, is said to have been preserved for centuries as a sacred relic in the treasure-house of successive Chinese monarchs.

The original having been lost, the "map" was reconstructed centuries afterwards from the general idea then retained, and it forms the basis of the *Yh King* or "Book of Changes" or Permutations. The system of this book is based on the permutation of two round marks, the one dark and the other light, but, as pointed out by Mr. Rivett Carnac,

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[1] *Proc. Asiat. Soc. Bengal*, 1870, p. 57.
[2] *Journ. Asiat. Soc. Bengal*, xlvi. 1877, (1), p. 1.
[3] *Journ. Roy. Asiat. Soc.*, 1903, p. 524.
[4] *Journ. Roy. Asiat. Soc.*, 1903, p. 524.
[5] *Journ. Roy. Asiat. Soc*, 1903, p. 517.

"looking to the difficulty of such representations on the Rock, it seems more probable that the system may have been by holes of two different sizes as now extant."

The Ho River has not yet been visited, and there is consequently no record of this inscription, but when the place comes to be visited it will be of the greatest interest to obtain a photograph of the inscription on the rocks referred to, as this inscription will probably be found to be analogous to the cup mark inscriptions of Kumaon and to the present one in the Chumbi Valley, and may be expected to throw light on the origin and purpose of such inscriptions. That they exist in other parts of China is shown by the fact that they have been discovered on a sea-cliff on the promontory of Sharting, on a hill near Soochow, in a cave dwelling in the province of Canton, and elsewhere.[1]

For these round marks Fuh-he, or his successors, substituted a short line—for the dark circle ● and a long line ——— for the light circle ○, and from permutations of these two constructed the signs or characters of his system. It is related in the "Book of Changes" that the original idea of the markings in the two kinds of circles, the ● and the ○, was suggested by the study of the heavenly bodies the suns and the moon, the father and mother, and their countless progeny the stars.

It is not possible at present to suggest what is the meaning which the makers of these inscriptions intended to convey, but that there is a systematic arrangement of the cups in certain groups, and that similarity of arrangement is found in different examples, no doubt shows that their arrangement must be meant to convey certain definite ideas. The discovery and study of many more examples will be necessary before any definite groupings can be conjectured to form any one symbol.

There would seem to be little doubt that these markings are probably a most ancient form of record of ideas, dating from the stone age, when the only implement available for making any form of inscription was a stone celt, by which they could be easily bored or ground out.

There are two points, however, which may be urged both against the antiquity of these markings and also against the theory that they are a system of symbols expressing ideas. The first is the fact that the cup markings are found made on monuments of a known age in Tibet. Thus on the *Do-Ring* monument at Lhasa, which records the treaty made between Tibet and China in A.D. 783, such markings have been made over the inscription, very largely obliterating it. The second is that cup marks continue to be made by pilgrims and passers-by at the present time on the rocks at places that are considered to be sacred, as for instance on the rocks on the banks of the Kyi-Chhu River on the way to Lhasa, at the place from which the first site of the Holy City is gained. Here the pebbles with which these cups are ground-out remain left in the cups themselves for the use of the pious who wish to add their quota to the work of scooping out the whole. (Pl. xiii, fig. 4.)

There is, however, one very great distinction between the old cup-mark inscriptions and these modern cups, namely, the entire want of any system of arrangement in the modern examples, or any similarity in shape or uniformity in size, as will be seen from the photograph of the rock on the way to Lhasa (Pl. XIII, fig. 4), and of the *Do-Ring*

[1] *Journ Roy. Asiat. Soc.*, 1903, p. 534.

stone (Pl. XIII, fig. 3). The fact that the grinding of holes into rocks and monuments at sacred places is still considered in Tibet as an act of devotion, is probably merely a survival of the religious veneration so often attached to the unknown and mysterious. This feeling is attached to these cup marks which existed from a previous age, their object being unknown and being considered miraculous, or at any rate connected with religion.

The markings on the present inscription are simple cups, as in the similar markings on the Kumaon rocks, and there is no surrounding ring to any of the cups such as is found in some examples.

Mr. Rivett Carnac considers this ring to be probably the symbol of the religion of the persons who made the inscriptions, as in its present survival in the Hindu symbols (of the Linga and Yoni). If this surmise is correct, it would tend to show that the makers of the present cup mark did not follow that form of religion. But, as I have already pointed out, all conclusions with regard to cup marks must at present be considered merely as conjectures.

The inscription itself is small, being only 31 inches in length and 22 inches in depth. But the rock on which it is made is striking and arrests the attention from the fact that there is a conspicuous band of white quartz, which is uncommon in the Chumbi Valley, running along the top of it. This, however, would not be a sufficient reason for selecting this particular rock for an inscription, and it must have been selected on other grounds. Though the river is now crossed by a bridge about a mile higher up at Rinchhengong, I found from inquiries that the bridge was formerly situated exactly below this rock, and existed until the last 50 years or so (when the present bridge at Rinchhengong was built) at the place where, according to tradition, the route from Bhutan had always crossed the river. It is also the point at which persons coming down from the Bhutan passes would find the first suitable crossing, and it may, therefore, be presumed to have been on the regular route, until the construction of the village of Rinchhengong in recent years led to the bridge being removed further up the river to that place.

The position of the inscription, therefore, bears out Mr. Rivett Carnac's theory that cup-mark inscriptions will be found " on the oldest and most frequented passes used from time immorial by the advancing tribes," and would show that there was intercourse by this route in prehistoric times. That the route after crossing the river at this point went up the Chumbi valley, following the course of the present road, is also shown by the existence of another cup-mark inscription on a rock about four miles higher up the valley.

The existence of this latter inscription I ascertained by inquiries, as it was at the time built up by a stone causeway, constructed about fourteen years ago, to carry the road over the projecting rock, on the side of the cliff adjoining which the inscription was said to be cut. Subsequently, when the 23rd Pioneers diverted the road at this point by blasting out a road round the projecting rock, and the inclined stone causeway was no longer used as the road, I had a sufficient portion of it removed to show that there was such an inscription on the side of the cliff some feet below the level of the causeway.

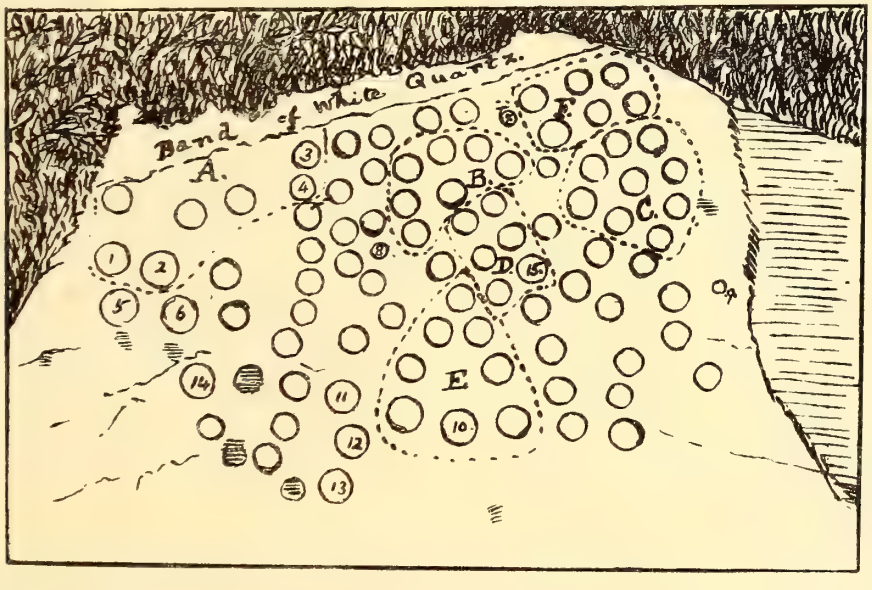
It had, however, been almost entirely obliterated by subsequent passsers-by, who had further scooped out the cups, and had run them one into the other, in the same way as on the *Do-Ring* monolith at Lhasa already alluded to. The reason for this subsequent

obliteration was that the form of the rock, on which the inscription occurs, resembles a closed-up doorway into a cave, and is consequently believed to be the entrance to a "treasury" of the local gods, situated within the mountain. As such, it is an object of veneration to passers-by, who "knocked on the door" by rubbing the holes with stones. The building of the causeway at this place, which was done by an officer deputed from Lhasa, was, I was informed, much resented at the time by the people of the valley, because it closed up this so-called "door," and a small hole was left in the causeway to mark the place where the door was.

Both these inscriptions are on rocks at points where there is only just room for the path, between the river and the cliffs, and, therefore, must have been conspicuous to every passer-by. The latter one is also at a point where the track was apparently brought to an abrupt ending by the large projecting rock which could not be got round and could only be climbed over, and its object was, therefore, perhaps to inform subsequent immigrants that there was a way beyond and they should climb over the rock and go on.

I looked carefully throughout the Chumbi Valley for other cup-mark inscriptions, but did not find any. I also looked carefully for them on the rocks of the Do-le Marpo, and Tre-mo La passes between Bhutan and the valleys leading down to the Phari plain, but was unable to find any there either.

As I have already mentioned, Mr. Rivett Carnac supposes that the dark and light circles which are shown in the Chinese "Book of Changes," the distinction being one which it would be impossible to make in an inscription on rock, represent cups of a larger and smaller size. Cups of two different sizes occur on the present inscrip-



tions, the cups numbered 1 to 15 on the accompanying figure being larger both in diameter and depth than the others, and also of a uniform size with one another. The theory that cup marks are an archaic form of ideographic writing, depends on the fact that they appear to be arranged in certain groups which, it is presumed, are intended to convey

some definite meaning. The most noticeable of these, both in the Kumaon rock inscriptions and in the present inscription, is the double row of parallel lines. There must, however, be other definite forms of grouping, if more than a single idea is to be conveyed, and in the text figure I show in compartments A, B, C, D, E and F. certain groupings which, because of the symmetry of arrangement or for other reasons, may possibly be intentional. One of these (group A.) bears a strong resemblance to the constellation of the Great Bear, which, with Orion, is the most conspicuous constellation in the sky. If this is so, the group may have some meaning connected with the direction of the path to be followed to the north. This is, however, merely a fanciful conjecture and I attach no importance to it, as the two large cups (Nos. 3 and 4) appear rather to form part of the continuous line running down from them vertically, and the other two large cups (Nos. 1 and 2) to form a lozenge with the two adjacent large cups (Nos. 5 and 6). I merely note the resemblance of this group to the constellation. The other possible groups which suggested themselves are based, in each case, on the symmetry of their arrangement. But, as already noted, the subject is at present purely one of conjecture, and resemblances must be noted, and definite groupings be found, to recur in different examples before a recognised symbol can be assumed.

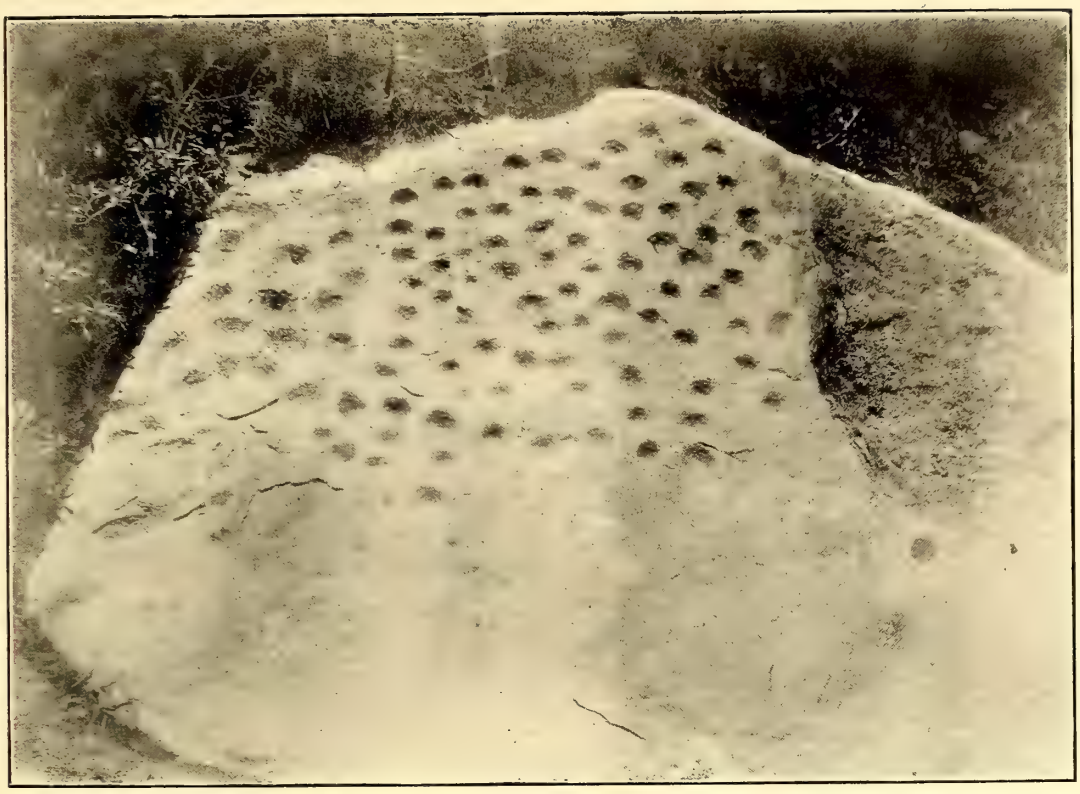


FIG. 1.

FIG. 2.

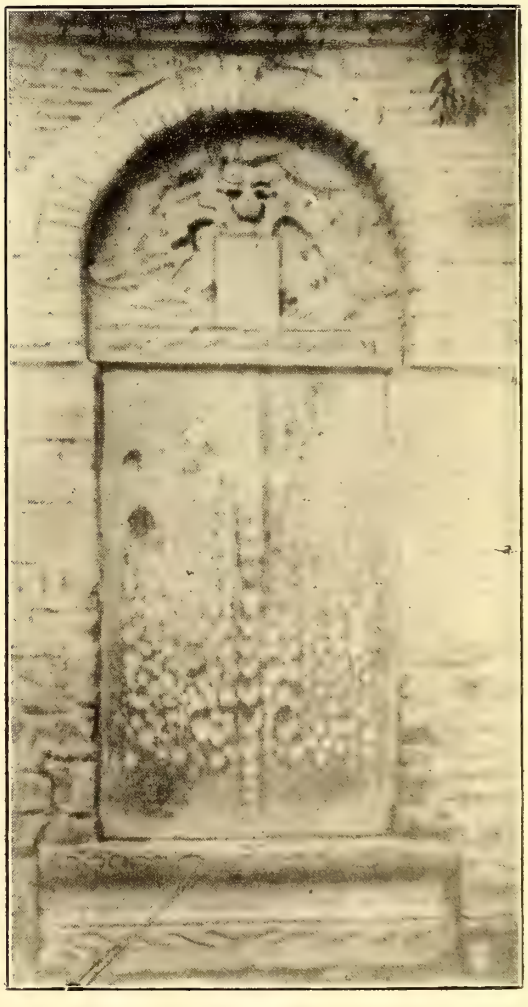


FIG. 3.

FIG. 4.

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

VOL. I, No. 14, pp. 277–299.

A DESCRIPTIVE LIST OF THE SEA-SNAKES IN THE INDIAN MUSEUM.

BY

CAPTAIN F. WALL, I.M.S., C.M.Z.S.

(WITH TWO PLATES.)

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Hydrophis neglectus, sp. nov. Wall, F., Calcutta Mem. As. Soc. Beng., Vol. I, No. 1906, pp. 288-289.

A Descriptive List of the Sea Snakes (Hydrophiidæ) *in the Indian Museum, Calcutta.*

(With two plates).

By Captain F. Wall, I.M.S., C.M.Z.S. *Communicated by* N. Annandale.

[Read March 7th, 1906.]

The classification of the sea snakes has proved to all observers a most difficult task, in fact has given more trouble than that of any other Ophidian family. No two authors have expressed similar opinions, and some idea of the confusion which has, in consequence, arisen, may be gained by taking a single example, *viz.*, *Distira cyanocincta*. This species, as now regarded by our greatest living authority Mr. Boulenger, comprises no fewer than 16 forms, all of which have been deemed by one authority or another distinct species.

Naturally the confusion existing in the minds of experts, whose views have appeared in print, has been transmitted to those of humbler attainments seeking information, and many of these with whom I have been personally acquainted, declare the task of identification from the books at present available quite hopeless, and this is very decidedly my own opinion. This argues either a very considerable degree of variation in individuals of the same species, or badly arranged methods of identification.

Now individuals of the species in this family are not subject to any greater variation, in their essential features, than those of other families, so that I feel sure it is the keys that are at fault. They, undoubtedly, require amplification and simplification.

I have lately had opportunities of examining all the sea snakes in the Bombay Natural History Society's Museum, as well as some 30 odd specimens collected by Mr. J. R. Henderson in Madras. More recently the kindness of Colonel A. Alcock, I.M.S., F.R.S., and Dr. Annandale, has given me access to the very large collection in the Indian Museum, and, as a result, my recent observations, grafted upon those made upon other collections in the past, lead me to think I can very materially elucidate this perplexed subject.

I am decidedly of opinion that the descriptions given in the works of our best-known authors, with one solitary exception, *viz.*, Mr. Boulenger, are too imperfect and too indefinite to hint at, much less indicate, the species under reference in many cases, and for this reason I adopt Mr. Boulenger's terminology in the present paper.

Even this great authority, I venture to think, has not been very happy in his choice of distinguishing characters, at any rate from the ordinary inquirer's point of view, for his most important guides are precisely those which are most difficult and troublesome to investigate, *viz.*, the counting of the costal scales and the ventrals. The latter sometimes exceed 500. Again, in adopting the same routine method of description which he applies to the land snakes, he reiterates with each species many characters (in relation to head-shields particularly) which have no weight in separating the species of this large family, and, whilst giving these undue prominence, fails to make mention of many others which are most striking and of the greatest value. In some instances a character

which is peculiar to one species only, and which may be seen at a glance, has escaped notice.

The points which I consider essential in classifying the members of the family are :—

(i) *Rostral*,—the portion seen above compared with the length of the suture between the nasals varies considerably. In many species of *Distira* it is decidedly less than half, and in many species of *Hydrophis* considerably more than half.

(ii) *Praefrontals*,—the relationship of the praefrontals with the supralabials is of extreme importance. The rule is for them to touch the 2nd supralabials. In one species they touch the 3rd supralabials, *viz.*, in *Hydrophis cantoris*, and this single point will suffice to distinguish the species from all others. Again, in a few species they touch no supralabials, notably in *Hydrophis nigrocinctus*, *H. alcocki*, *H. melanocinctus*, *Distira jerdoni*, *D. viperina*, and *D. hendersoni*.

(iii) *Frontal*,—this shield is rather broader than the supraocular shields in all the species, but in *D. viperina* alone it is from twice to three times as broad. Again this shield touches six shields in every sea snake except one, *viz.*, *Platurus colubrinus*, where it touches seven. The sutures which it makes with surrounding shields are important. The parietal sutures are almost always the largest, and this is a character almost peculiar to the hydrophiids as a group. The parietal sutures are not nearly twice as large as the praefrontals in the majority of species, but in two at least they are fully so, *viz.*, *Hydrophis nigroicnctus* and *Distira hendersoni*. Again the supraocular sutures are the smallest in one species only, *viz.*, *D. viperina*.

(iv) *Parietals*,—these shields touch one postocular as a rule. I only know of one exception, *viz* , *Hydrophis cærulescens*, in which species the parietals fail to touch the postocular. As already noted by Mr. Boulenger and others, these shields are broken up into small scales in *Enhydris curtus*, but they do not qualify this observation by remarking that the feature is peculiar to this species.

(v) *Nasals*,—in many species sutures run from the nostril outwards, and when present they almost invariably (except in some abherrant examples of one or two species) run to the 2nd supralabial. In one snake, however, *Enhydris hardwickii*, this suture, which is always present, runs to the 1st supralabial, and on this point alone the identity of the species is almost certain.

(vi) *Loreal*,—only one sea snake known to me possesses normally a true loreal shield, *viz.*, *Distira hendersoni*.

(vii) *Temporals*,—the number of the anterior shields is important, and this feature together with the character and number of the succeeding shields bordering the parietals has been given due prominence by Günther.

(viii) *Marginals*,—sometimes one or more small wedge-shaped scales are intercalated between the infralabials at the labial margin. These little scales, insignificant as they may appear, are of great importance. To begin with they are seen in only one land snake, *viz.*, the Cobra, where one is wedged between the 4th and 5th. Many sea snakes have none, notably *H. nigrocinctus*, *H. gracilis*, *H. cantoris*, *D. jerdoni*, *D. ornata*, and *Enhydrina valakadyen*. In a few a whole row borders the lower lip behind the 2nd infralabial, *viz.*, in the genus *Platurus* and in *Distira cyanocincta*. In *D. brugmansii* there

are normally two placed behind the 3rd infralabial ; and in most of the other species one single scale is wedged between the 3rd and 4th infralabials.

(ix) *Infralabials*,—these number three in one species only, *viz.*, *D. jerdonii ;* in most others there are four, and in a few *Distira* five. The 4th is almost always the largest of the series, but in some *Distira* the 5th is the largest. When the 4th is largest it comes into contact with three scales behind as a rule, more rarely two scales only, as in *H. gracilis* and *H. cantoris*. The suture between the first is usually larger than that between the anterior sublinguals in most of the genus *Hydrophis*, while it is usually smaller in the genus *Distira*.

(x) *Sublinguals* are usually present in two pairs, but frequently absent, as in *E. valakadyen*, *Hydrus platurus*, *H. cærulescens* and the genus *Enhydris*. The anterior are almost always in contact with three infralabials and the posterior with the 3rd and 4th ; but in *D. jerdonii* the anterior touch two infralabials only, and the posterior the 2nd and 3rd.

(xi) *Costals*,—the costals have been fully studied by others. I count these in three places ; they vary within certain limits in individuals of the same species, but in many cases are valuable aids to differentiation. The condition of imbrication or juxtaposition of these scales, to which Mr. Boulenger has given considerable attention, is, I find in many cases, difficult to decide to one's own satisfaction, though in many cases it is a valuable character. In most of these snakes the costals are subequal everywhere, but in both species of *Enhydris* a very noticeable enlargement of the lowest three rows is an important aid to recognition.

(xii) *Ventrals*,—in almost all the sea snakes these shields are distinct though small, *i.e.*, not twice the breadth of the adjoining costals. Often they are more or less broken up at intervals. In two snakes they are wholly absent, *viz.*, *Enhydris hardwickii* and *Hydrus platurus*. In one snake they are distinct anteriorly and wanting posteriorly, *viz.*, *Enhydris curtus*. In two species they are distinct posteriorly and unusually broadly developed anteriorly, *i.e.*, become three or four times the breadth of the adjacent costals, *viz.*, in *D. viperina*, while in *H. schistosus* and in the genus *Platurus* they are as broad throughout as in the land snakes.

It may be urged that many of these characters are too inconstant to merit the importance I attach to them, but I can very emphatically state that I have found them far more constant than many of the characters quoted by other authors, such for instance as the number of the praeoculars, postoculars, and labials, characters which I consider quite useless. Again their constancy is not one whit inferior to that of the characters relied upon to identify other snakes, all of which show occasional departures from the normal. In the descriptions which follow I quote in brackets all the exceptions I have met with, and this refers to all the specimens I have examined, not only those in the Indian Museum.

The collection includes 6 genera, and 24 species, all with one exception (*H. elegans*) occurring within our Indian limits.

Three I have described as new, whilst I have eliminated three others previously regarded as distinct, *viz.*, *Distira gillespiæ* (Boulenger), *Distira tuberculata* (Anderson), and *Distira andamanica* (Annandale). The collection contains upwards of 150 specimens.

1. Hydrus platurus (Linn.)

Hydrus platurus, *Blgr., Cat. Snakes Brit. Mus.* Vol. III, p. 266.
,, ,, *Sclater, List Snakes Ind. Mus.* 1891, p. 62.
,, ,, *Wall in Proc. Zool. Soc.*, 1903, pp. 95 and 101.
,, ,, *Wall in Journ. Bomb. Nat. Hist. Soc.* Vol. XVI, p. 310.

Museum No.	Variety.	Habitat.	Donor.	Remarks.
300	B	.....	.....	Without lateral or ventral spots.
8282	B	Aripo, W. Coast, Ceylon ...	W. Ferguson ...	
8284	C	Ceylon	F. Stoliczka	
14452	C	Puri, Orissa	J. L. Hendley ...	
14453	C	,, ,, ...	,, ,, ...	
14456	C	,, ,, ...	,, ,, ...	
13394	D	Bay of Bengal ...	J. H. T. Walsh ...	
13801	D	Trivandrum	Trivandrum Mus. (Ex.)	Without yellow line costally.
14448	D	Puri, Orissa	J. L. Hendley ...	
14449	D	,, ,, ...	,, ,, ...	
14450	D	,, ,, ...	,, ,, ...	
14455	D	,, ,, ...	,, ,, ...	
14457	D	,, ,, ...	,, ,, ...	
8281	E	Nicobars	M. Bemsch	Dorsal stripe with undulating lower border posteriorly.
8283	E	Puri, Orissa	Sir J. Fayrer... ...	"Thanatophidia" Plate XVII.
8467	E?	Persian Gulf ...	Blandford	Dorsal stripe very faint (faded ?)
11946	E	Travancore	R. B. Foote	
13661	E	.....	.....	
14443	E	Puri, Orissa	.....	
14444	E	,, ,, ...	.....	
14445	E	,, ,, ...	.....	
14446	E	,, ,, ...	.....	
14451	E	,, ,, ...	.....	
14454	E	,, ,, ...	.....	
14527	E	?	Pilot Mills	

No. 13090 of Sclater's list missing.

Rostral,—portion seen above half, or less than half the length of the suture between the nasals. *Praefrontals* touch the 2nd supralabials. *Frontal*,—the praefrontal sutures are the smallest, and the supraocular usually the largest. *Temporals*,—two or three anterior, succeeded by two or more scales in contact with the parietals. *Marginals*,—none. *Infralabials*,—5. The 4th or 5th largest. *Sublinguals*,—too poorly developed to deserve the name. *Costals* juxtaposed everywhere. *Ventrals* absent.

An easy snake to recognise apart from its colour, which is very distinctive. It has no ventrals, no sublinguals, and no marginals, and the costals are juxtaposed throughout.

2. Hydrophis nigrocinctus Daud.

Hydrophis nigrocinctus, *Blgr.*, *Cat. Snakes Brit. Mus.* Vol. III, p. 277.
,, ,, *Sclater*, *List Snakes Ind. Mus.* (1891) p. 63, No. 8239.
Distira lapemidoides, *Sclater*, *List Snakes Ind. Mus.* (1891) p. 66, No. 8235.

Museum No.	Age.	Habitat.	Donor.	Scales.			Ventrals.
				Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8235	Young ...	?	?	28	37	37	339
8239	Adult ...	?	?	27	3	36	305

Rostral,—portion seen above less than half the suture between the nasals. *Praefrontals* touch no supralabial. *Frontal*,—the parietal sutures largest, and fully twice as long as the praefrontals. *Temporals*,—two or three anterior, succeeded by two small scales in contact with the parietals. *Marginals*,—none in one specimen No. 8235. One between the 3rd and 4th infralabials in No. 8239. *Infralabials*,—4. Fourth largest, and in contact with three or four scales behind. Suture between the first equal to or rather less than the suture between the anterior sublinguals. *Sublinguals*,—two well-developed pairs, posterior in contact or just separated. *Costals* imbricate everywhere.

Evidently a very rare snake. I have seen two examples only.

3. Hydrophis latifasciatus Günth.

Hydrophis latifasciatus—*Blgr. Cat. Snakes Brit. Mus.* Vol. III, p. 279 and Plate XIII.
,, ,, *Sclater*, *List Snakes Ind. Mus.* (1891) p. 63, No. 11496.
,, coronatus *Sclater*, *List Snakes Ind. Mus.* (1891) p. 63, Nos. 8522 and 8773.

Museum No.	Age.	Habitat.	Donor.	Scales.			Ventrals.
				Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8522	Adult ...	Sundarbans ...	Captain H. Butcher ...	21	28	30	345
8773	,, ...	Calcutta	Sir J. Fayrer ...	22	29	31	354
11496	,, ...	Mergui Expedition ...	J. Anderson ...	21	28	29	310

Rostral,—portion seen from above less than half the suture between the nasals. *Praefrontals* touch the 2nd infralabial. *Frontal*,—the parietal sutures are largest, but less than twice the praefrontals. *Temporals*,—one anterior, with another subequal shield behind touching the parietals. *Marginals*,—one wedged between the 3rd and 4th infralabials. *Infralabials*,—4. The suture between the first, subequal to or greater than that between the anterior sublinguals; the 4th is the largest of the series, and in contact with three scales behind. *Sublinguals*,—two well-developed pairs, the posterior in contact, or separated by a single scale. *Costals* imbricate everywhere. Tail with a large terminal scutum.

4. Hydrophis coronatus Günth.

Hydrophis coronatus, *Blgr. Cat. Snakes Brit. Mus.* Vol. III, p. 279.
,, ,, *Sclater, List Snakes Ind. Mus.* 1891, p. 63, Nos. 8234, 8253, and 8255.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8234	Hugli River	J. Anderson	21	27	29	315
8253	,, ...	H. L. Haughton ...	19	27	29	332
8255	,, ...	J. Anderson	20	25	27	306

Rostral,—portion seen from above half the suture between the nasals. *Praefrontals* touch the 2nd supralabial. *Frontal*,—the parietal sutures are largest, but not twice the praefrontals; *Temporals* usually touch the labial margin. One large subequal shield behind also touching the parietals. *Marginals*,—one small cuneate between the 3rd and 4th infralabials; (two in No. 8234). *Infralabials*,—4. The suture between the first subequal to that between the anterior sublinguals; the 4th is the largest of the series, and in contact with three scales behind. *Sublinguals*,—two pairs of well-developed shields, both in contact. *Costals*,—imbricate throughout.

5. Hydrophis gracilis (Shaw).

Hydrophis gracilis, *Blgr. Cat. Snakes Brit. Mus.* Vol. III, p. 280.
,, ,, *Sclater, List Snakes Ind. Mus.* 1891, p. 64, Nos. 8236, 8268, 8468, 8543, 8544, 11484, 13276

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8236	Puri, Orissa	Sir J. Fayrer	19	32	35	244
8268	Hugli River	H. L. Haughton ...	19	31	32	240
8468	Persian Gulf	Blanford	Bad Specimen			
8543	Karachi	Exchanged	,,			
8544	,, ...	,, ...	19	29	33	257
11484	Mergui Expedition. ...	J. Anderson	21	31	34	290
13276	Puri, Orissa	A. Alcock	19	31	33	270

Rostral,—portion seen from above greater than half the suture between the nasals. *Praefrontals* touch the 2nd supralabial (except in No. 11484). *Frontal*,—parietal sutures the longest, but not twice the praefrontals. *Temporals*,—one large followed by another subequal shield, both in contact with the parietals. *Marginals*,—none. *Infralabials*,—4. The suture between the first greater than that between the anterior sublinguals; 4th largest, and in contact with two scales behind. *Sublinguals*,—two well-developed pairs, both in contact. *Costals* imbricate anteriorly, juxtaposed posteriorly. I have examined 15 examples.

6. Hydrophis cantoris Günth.

Hydrophis cantoris, *Blgr. Cat. Snakes Brit. Mus.* Vol. III, p. 281, and Plate XIV.
„ „ *Sclater, List. Snakes Ind. Mus.* 1891, p. 64, Nos. 8231, 8260, 8263, 8627, 12098, 1258, 12853.
Hydrophis fasciatus, *Sclater, List Snakes Ind. Mus.* 1891, p. 63, No. 8258.
Distira gillespiae, *Blgr. in Journ. Bomb. Nat. Hist. Soc.* Vol. XII, p. 642 and Plate.
„ „ *Wall in Journ. Bomb. Nat. Hist. Soc.* Vol. XV, p. 723 and figure.
„ „ *Wall in Journ. Bomb. Nat. Hist. Soc.* Vol. XVI, p. 311.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8231	Sandheads	Purchased	23	31	41	435
8258	Hugli River	... ...	25	32	43	465
8260	Sandheads	Sir J. Fayrer	23	35	40	...
8263	Puri, Orissa	„ „	23	31	46	450
8623	Indian Seas	F. Stoliczka	23	28	39	406
8627	Puri, Orissa	Sir J. Fayrer	23	35	41	417
12098	„ „	Commissioner of Puri ...	23	30	43	427
12587	Hugli River	S. Elson	24	30	43	445
12853	Puri	J. Barnett	25	33	45	430
14459	„	J. L. Hendley	24	33	45	440
14471	„	„ „	25	31	46	...
14473	„	„ „	23	31	42	418

Rostral,—portion seen from above more than half the length of the suture between the nasals. *Præfrontals* touch the 3rd supralabial (also the 2nd sometimes;—four specimens out of 16). *Frontal*,—parietal sutures slightly largest. *Temporals*,—one large anterior, followed by another subequal shield, touching the parietals. *Marginals*,—none. *Infralabials*,—four. The suture between the first, larger than that between the anterior sublinguals; the 4th largest, and in contact with 2 scales behind. *Sublinguals*,—two well-developed pairs, both in contact. *Costals*,—anterior imbricate, posterior juxtaposed.

I think there can be no doubt that Mr. Boulenger is in error in supposing the snake he described as *Distira gillespiæ* in the Journal of the Bombay Natural History Society (Vol. XII, p. 642) a new species. I have very carefully compared the plate accompanying his description, with that of *Hydrophis cantoris* shown in Plate XIV of his Catalogue of Snakes in the British Museum, Vol. III, and I have also carefully read his two descriptions side by side, and find them practically identical. I have now examined 16 specimens of this snake, and find that Mr. Boulenger's description of *D. gillespiæ* perfectly accords with them, except in the fewer number of the ventrals. My lowest number, *viz.*, 377, is however, only 5 in excess of his specimen. As far as my experience goes, this is the only sea snake in which the præfrontal touches the 3rd supralabial. The peculiar projecting snout, and *f*-shaped commissure of the mouth are also remarkable facial characteristics. The absence of any marginal scales, and the juxtaposed character of the posterior costals are also unusual features, and all are conspicuously well shown in the plate of *D. gillespiæ*.

7. Hydrophis fasciatus (Schneid.).

Hydrophis fasciatus, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 281.
,, ,, *Sclater, List Snakes Ind. Mus.*, 1891, p. 63. Nos. 8257, 8259, 8261, 8264, 8265, and 13393.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8257	Akyab	A. Dunn	30	50	51	470
8259	Hughli River	?	30	48	44	483
8261	Puri	Sir J. Fayrer	30	48	46	495?
8264	,, ...	,, ,, ...	29	42	44	463
8265	,, ...	,, ,, ...	28	44	41?	504?
13393	Bay of Bengal	J. H. T. Walsh	32	50	50	480

Rostral,—portion seen from above less than half the suture between the nasals. *Præfrontals* touch the 2nd supralabials (in 2 specimens out of 10, they fail to do so). *Frontal*,—the parietal sutures are largest, but not twice the præfrontals. *Temporals*,—one large anterior which sometimes reaches the margin of the lip, succeeded by another subequal shield, touching parietals. *Marginals*,—one, cuneate, between the 3rd and

4th infralabials. *Infralabials*,—four. Suture between the first greater than that between the anterior sublinguals; the 4th is the largest, and in contact with 3 or 4 scales posteriorly. *Sublinguals*,—two well-developed pairs both in contact. *Costals*,—imbricate throughout.

Young specimens of this snake are extremely like young examples of *H. gracilis*, and the new species I am here describing, *H. melanocinctus*, in colour and markings. All have completely black heads, black annuli on the body which are confluent ventrally, especially in the neck and forebody.

8. Hydrophis obscurus Daud.

Hydrophis obscurus. *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 284.
,, ,, *Sclater, List Snakes Ind. Mus.*, 1891, p. 63, Nos. 8254, 8256, 8262.
Distira lapemidoides, *Wall and Evans in Journ. Bomb. Nat. Hist. Soc.* Vol. XIII, pp. 346 and 615.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8254	?	?	37	50	37	584
8256	Hugli River	H. L. Haughton ...	35	44	38	387
8262	,, ...	J. Anderson	36	45	41	430
14234	Naraingunge	H. S. Peter	33	42	35	392?
14235	,, ...	,, ...	32	41	34	395?
14692	Dhamra R., Chandbally dist.	H. W. Peal	37	46	36	419

Rostral,—portion seen from above half or less than half the suture between the nasals. *Præfrontals* touch the 2nd supralabial. *Frontal*,—the parietal sutures longest, but not twice the præfrontals. *Temporals*,—one large (two in one specimen), with another subequal shield behind, touching the parietals. *Marginals*,—one, small, cuneate, between the 3rd and 4th infralabials. *Infralabials*,—four. Suture between the first subequal to that between the anterior sublinguals; the 4th largest, and in contact with 3 scales behind. *Sublinguals*,—two well-developed pairs, both in contact. *Costals*,—imbricate throughout.

9. Hydrophis mammillaris (Daud.).

Hydrophis mammillaris, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 277.
Distira lapemidoides, *Sclater, List Snakes Ind. Mus.*, 1891, p. 66, No. 13392.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
13392	Bay of Bengal ...	J. H. T. Walsh	29?	39	38	331

Rostral.—(?) *Præfrontals*,—confluent with nasals. *Frontal*,—parietal sutures longest but not twice præfrontals. *Temporals*,—two anterior, the upper large, succeeded by another subequal shield in contact with the parietal. *Marginals*,—one, cuneate, between the 3rd and 4th infralabials. *Infralabials*,—five. Suture between the first greater than that between the anterior sublinguals, the 2nd excluded from contact with anterior sublinguals; 5th largest. *Sublinguals*,—two well-developed pairs both in contact. *Costals*,—imbricate anteriorly, juxtaposed posteriorly.

The specimen is a small and sodden one, and aberrant in that the præfrontals and nasals are completely confluent on each side. The anterior sublinguals touch the 1st, 3rd and 4th infralabials on each side. The contact of the 4th with the anterior sublinguals is, I believe, peculiar to this species; if it is a normal character, which I doubt.

10. Hydrophis melanocinctus sp. nov.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
14470	Puri ...	J. L. Hendley	25	39	39	380

Rostral,—portion seen above about half the suture between the nasals. *Præfrontals* touch no supralabial. *Frontal*,—parietal suture largest, but not twice præfrontals. *Temporals*,—one large anterior, with one subequal shield behind touching the parietal. *Marginal*,—one, cuneate, between the 3rd and 4th infralabials. *Infralabials*,—four. Suture between the first greater than that between the anterior sublinguals; 4th largest, and in contact with three scales behind. *Sublinguals*,—two well-developed pairs, both in contact. *Costals*,—imbricate everywhere.

I have little hesitation in making this a new species. The specimen is a young one in excellent preservation, and in colour and markings exactly like young examples of *H. fasciatus* and *H. gracilis*, but differing from both in scale and shield characters in many ways.

From *H. gracilis* the greater number of costals and ventrals sufficiently distinguishes it apart from many differences in head shields.

From *H. fasciatus* the fewer number of costals and ventrals, apart from head shield characters, will suffice to proclaim it distinct.

11. Hydrophis alcocki, sp. nov.

Distira robusta, *Sclater, List. Snakes Ind. Mus.*, 1891, p. 65, No. 8244.

Rostral,—portion visible above less than half the suture between the nasals. *Præfrontals* touch no supralabial. *Frontals*,—parietal sutures subequal to præfrontals. *Temporals*,—one large anterior, behind which are two small scales in contact with the parietals. *Marginals*,—two behind the 3rd infralabial and cutting the 4th off from the labial margin. *Infralabials*,—four. Suture between the first subequal to that between the anterior sublinguals; 4th largest, and in contact with three scales behind. *Sublinguals*,—two well-developed pairs both in contact. *Costals*,—imbricate everywhere.

There is no doubt about this being a new species which I venture to call after Colonel Alcock, to whom I am indebted for the pleasure of examining the very large collection in the Indian Museum. The single specimen is a young one with perforate navel. Its locality is Puri, Orissa. There are 40 well-defined brown annuli, rather broader vertebrally, and confluent ventrally. These are at midcosta about twice as broad as the intervals.

12. Hydrophis neglectus, sp. nov.

Hydrophis obscurus, *Sclater, List Snakes Ind. Mus.*, 1891, p. 63, No. 8598.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8598	Rangoon ...	J. Armstrong	48?	54?	45	Exceed 420

Rostral,—portion seen above half the suture between the nasals. *Præfrontals* touch the 2nd supralabial. *Frontal*,—sutures subequal. *Temporals*,—one anterior on right side, two on left, behind which two small scales border the parietals. *Marginals*,—one small, between the 3rd and 4th infralabials. *Infralabials*,—four. The suture between the first subequal to that between the anterior sublinguals, 4th largest, and in contact with three scales behind. *Sublinguals*,—two well-developed pairs, both in contact. *Costals*,—imbricate everywhere.

This is obviously a species hitherto not described. The specimen is in bad preservation, being very sodden, faded, and very young. The scales can be with difficulty counted, and a rent in the neck makes it probable that the ventrals might count from 15 to 30 more than the 420 I count up to this point. It is girt with 59 well-defined annuli, not confluent ventrally, little if at all broader vertebrally, and at midcosta about as broad as the interspaces. The number of scales anteriorly, together with the ventrals, declare its specific identity.

13. Distira ornata (Gray).

Distira ornata, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 290.
,, ,, *Wall in Proc. Zool. Soc. Lond.*, 1903, pp. 95 & 101.
Distira andamanica, *Annandale in Journ. As. Soc. Bengal*, 1905, p. 194.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
14314	Trivandrum ...	Trivandrum Mus. (Exchanged) ...	35	46	41	273
15238	Andamans ...	Marine Survey (Type of *Distira andamanica*)	33	39	35	245
15266	Colombo ...	Marine Survey	35	41	38	232

Rostral,—portion seen from above half or less than half the suture between the nasals.—*Præfrontals* touch the 2nd supralabial (except in two specimens out of 15). *Frontal*,—parietal sutures longest but not twice the præfrontals. *Temporals*,—two or three anterior, the uppermost large, and succeeded by two or three small scales in contact with the parietals. *Marginals*,—none. *Infralabials*,—five. Suture between the first subequal to, or smaller than that between the anterior sublinguals; the 5th largest, and in contact with three behind. *Sublinguals*,—two well-developed pairs, the posterior separated by two or three scales. *Costals*,—subimbricate or juxtaposed anteriorly, juxtaposed posteriorly.

I am familiar with this snake, having examined 15 specimens, and I think there can be no doubt that the specimen referred to by Dr. Annandale as *Distira andamanica* is really *D. ornata*. It accords well with others I have records of in my note-book. Compared with Boulenger's description in Vol. III, Catalogue of Snakes in the British Museum, the scales appear to be rather few, but my own records make the scales anteriorly 30 to 36, and in midbody 33 to 50.

14. Distira brugmansii (Boie).

Distira brugmansii, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 292.
,, ,, *Wall in Proc. Zool. Soc. Lond.*, 1903, p. 96.
Distira robusta, *Sclater*, *List Snakes Ind. Mus.*, 1891, p. 65, Nos. 8243, 8245, 8273, 11485, 11505, 12914, 12915, 12916, 12917, 12918, 12919, 12920, 13155, 13324.
,, ,, *Wall and Evans in Journ. Bomb. Nat. Hist. Soc.* Vol. XIII, p. 615.
Hydrophis spiralis, *Wall and Evans in Journ. Bomb. Nat. Hist. Soc.* Vol. XIII, p. 348.

Museum No.		Habitat.	Donor.	Scales.			Ventrals.
				Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8243	Young ...	Puri ...	Sir J. Fayrer	30	35	33	...
8245	,, ...	,, ...	,, ,, ...	28	32	30	329
8273	...	,, ...	,, ,, ...	...	...	...	...
11485	...	Mergui ...	J. Anderson	...	...	...	...
11505	...	,, ...	,, ,, ...	29	35	32	337
12914	...	Ganjam ...	Mus. Collector	29	33	31	333
12915	...	,, ...	,, ,, ...	27	31	29	323
12916	...	,, ...	,, ,, ...	27	32	31	343
12917	...	,, ...	,, ,, ...	27	33	29	345
12918	...	,, ...	,, ,, ...	29	32	32	325
12919	...	,, ...	,, ,, ...	28	33	33	337
12920	...	,, ...	,, ,, ...	30	35	34	356
13155	...	Cuddalore ...	F. Grieves	27	34	32	359
13324	...	Singapore ...	Raffles Mus. (Davison) ...	31	36	33	325

Rostral,—portion seen above half or more than half the suture between the nasals. *Præfrontals* touch the 2nd supralabial (two exceptions in 24 specimens). *Frontal*,—parietal sutures largest, but not twice the præfrontals. *Temporals*,—one, large, which often reaches the labial margin, and is succeeded by one or more large shields which touch the parietals. *Marginals*,—two or three after the 3rd infralabial (rarely one only). *Infralabials*,—five. Suture between the first less than that between the anterior sublinguals; the 4th the largest, and in contact with three or four scales behind. *Sublinguals*,—two well developed pairs, both in contact. *Costals*,—imbricate throughout.

15. Distira cyanocincta (Daud.).

Distira cyanocincta, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 294.
,, ,, *Sclater, List Snakes Ind. Mus.*, 1891, p. 65, Nos. 8247 & 8248.
,, ,, *Wall in Proc. Zool. Soc. Lond.*, 1903, p. 96.
,, lapemidoides, *Sclater, List Snakes Ind. Mus.*, 1891, p. 66, Nos. 8278, 8632.
,, tuberculata *Sclater, List Snakes Ind. Mus.*, 1891, p. 65, No. 8271.
Hydrophis tuberculata, *Anders. in Journ. As. Soc. Bengal*, 1871, pt. 2, p. 18.
,, dayanus, *Stoliczka in Proc. As. Soc. Bengal*, 1872, p. 89.

Museum No.	Variety.	Habitat.	Donor.	Scales.			Ventrals.
				Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
314	D	?	?	33	42	43	354
8247	B	Hugli River ...	H. L. Haughton ...	31	40	38	313?
8248	A	?	?	29	36	37	325
8271	B	Calcutta	J. F. Galiffe (Type of *Hydrophis tuberculata*, Anderson).	32	40	39	332
8278	...	Karachi	F. Stoliczka (Type of *Hydrophis dayanus*, Stoliczka).	33	39	40	342
8632	...	Persian Gulf ...	Blanford	33	41?	40	330
13664	A	Howrah	R. D. Murray ...	32	38	39	...
14475	B	Puri	J. L. Hendley ...	33	42	41	365
14476	B	,, ...	,, ,, ...	30	37	37	357
14486	A	,, ...	,, ,, ...	28	33	37	318

Rostral,—portion seen from above half, or more than half the suture between the nasals. *Præfrontals* touch the 2nd supralabial (without exception in 28 specimens). *Frontal*,—parietal sutures longest but not twice præfrontals. *Temporals*,—two (sometimes three) anterior. One large succeeded by two small scales in contact with the parietals. *Marginals*,—a complete row border the lip, after the 2nd infralabial. *Infralabials*,—five. Suture between first variable, usually subequal to the suture between the anterior sublinguals, sometimes less, rarely greater. The 4th is the longest of the series

and in contact with 3 or 4 scales behind. *Sublinguals*,—two well-developed pairs, both in contact. *Costals*,—imbricate everywhere.

This is one of the very few sea snakes which has a complete row of marginals succeeding the 2nd infralabial; others are the 3 species of the genus *Platurus*, *Distira major*, and some aberrant examples of *Distira brugmansii*. It is also one of the few snakes that has 5 infralabials, as occurs in *Distira brugmansii*, and *D. ornata*, and *H. mammillaris*.

I think there is not the least doubt that Anderson's *Distira tuberculata*, the type specimen of which I have examined, is nothing more nor less than this species. I have detailed records in my note-book of 28 specimens of *D. cyanocincta*, and this type specimen perfectly accords with them.

16. Distira viperina (Schmidt).

Distira viperina, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 298.
„ „ *Sclater*, *List Snakes Ind. Mus.*, 1891, p. 66, Nos. 8274, 8275, 8276, 8277, 8279, 11497.
„ „ *Wall in Proc. Zool. Soc. Lond.*, 1903, p. 96.
„ lapemidoides, *Sclater*, *List Snakes Ind. Mus.*, 1891, p. 66, No. 8269.

Museum No.	Habitat.	Donor.
8269	Rangoon	Col. Nuthall.
8274	Puri	Sir J. Fayrer.
8275	„	„
8276	„	„
8277	„	„
8279	Persian Gulf	Sheikh Hinghoo Khan.
11497	Mergui	J. Anderson.
14479	Puri	Dr. J. L. Hendley.
14480	„	„

Rostral,—portion seen from above about half the suture between the nasals. *Præfrontals* touch no supralabial. *Frontal*,—parietal sutures longest, and more than twice the supraoculars which are the shortest. *Temporals*,—two anterior, the upper large with two smaller scales behind bordering the parietals. *Marginals*,—normally one, small cuneate between the 3rd infralabials (in No. 8275 two behind the 3rd infralabial). *Infralabials*,—suture between the first equal to or rather greater than the suture between the anterior sublinguals; 4th largest, and in contact with three behind. *Sublinguals*,—two well-developed pairs, the posterior separated by one or more scales. *Costals*,—imbricate anteriorly, juxtaposed posteriorly.

One of the easiest of the sea snakes to recognise. The ventral shields narrow behind and in midbody become unusually broad (three or four times the width of the costals) for a limited space in the forebody, a character peculiar to this snake and *H. schistosus*. Another feature peculiar to this species lies in the shape of the frontal shield,

which is two or three times as broad as the supraocular, and in which the supraocular sutures are the smallest. Another unusual character is that the præfrontal does not touch any supralabial.

17. Distira jerdonii (Gray).

Distira jerdonii, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 299.
„ „ *Sclater, List Snakes Ind. Mus.*, 1891, p. 68, *Nos.* 8237, 8280, 13188, 11486, 11487, 11488, 11489.

Museum	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midboby.	Two head's-lengths before vent.	
8237	Mergui	W. Theobald	17	19	19	247
8280	Puri	Sir J. Fayrer	16	19	19	247
11486	Mergui	J. Anderson	17	19	19	225
11487	„	„	17	21	20	217
11488	„	„	17	21	20	247
11489	„	„	17	19	19	233
13188	Madras	F. Grieves	17	19	19	246

Rostral,—portion seen from above more than half the suture between the nasals. *Præfrontals* touch no supralabial. *Temporals*,—one large anterior which reaches the lateral margin (except in No. 8237). *Marginals*,—none. *Infralabial*,—three only. The suture between the first subequal, or rather shorter than that between the anterior sublinguals; the 3rd is the largest, and in contact with two scales behind. *Sublinguals*,—two pairs normally, the posterior larger, but often one or both of the anterior are suppressed. Both when present are in contact. *Costals* imbricate everywhere.

One of the easiest sea snakes to recognise. The infralabials are peculiar in two ways; only three are present, and only two of these touch the anterior sublinguals, and both these characters are peculiar to this snake as also is the fact that the scales round the neck number only 15 to 17. Other unusual characters are that the præfrontal touches no supralabial, the anterior temporal normally borders the lip and there are no marginals.

18. Distira hendersonii Blgr.

Distira hendersonii, *Blgr. in Journ. Bomb. Nat. Hist. Soc.*, Vol. XIV, p. 719, and plate.

Hydrophis nigrocinctus, *Sclater, List Snakes Ind. Mus.* 1891, p. 63, No. 8240.

Distira cyanocinctus, *Wall and Evans in Journ. Bomb. Nat. Hist. Soc.* XIII, p.

Scales.			Ventrals.	Loreals.	Praeocs.	Temporals.	Labials.	Marginals.	Age.	Museum No.
31	43	42	338	1	2	4 (L) 3 (R)	9 (4) (R) 8 (4) (L)	2	Adult	8240
...	...	...	...	...	...			...	...	...

Rostral,—portion seen from above half or less than half the suture between the nasals. *Præfrontals* touch no supralabial. *Frontal*,—parietal sutures twice, or more than twice the præfrontals. *Temporals*,—two or three anterior. The upper moderate, followed by another subequal shield, and two small, all touching the parietal. *Marginals*,—one normally, between the 3rd and 4th infralabials. *Infralabials*,—suture between the first subequal to that between the anterior sublinguals; 4th largest, and in contact with three or four scales behind. *Sublinguals*,—two well-developed pairs, the posterior separated by two scales. *Costals*,—imbricate everywhere.

I have examined three specimens which compare almost exactly with the type plate. Two of these were obtained before the snake was described as a new species by Mr. Boulenger.

It is the only sea snake I believe with a genuine loreal shield. As an unusual occurrence a pseudo-loreal exists in certain specimens of *Enhydrina valakadyen*, *Distira cyanocincta*, etc., but it is obvious in these cases that this shield is a fragment of the nasal detached by sutures running from the nostril. The supralabials are very irregular, the 3rd, 3rd and 4th, or 4th alone may touch the eye, or none at all owing to being broken up. Other unusual features are the failure of the præfrontals to touch a supralabial, the undue length of the fronto-parietal suture which is twice that of the fronto-præfrontal, and the separation of the posterior sublinguals.

There is an extraordinarily close resemblance between this snake and *Hydrophis nigrocinctus*, so far as head and body markings and colours are concerned.

As the snake is evidently rare, I add the details of the specimens obtained by Evans and me in Burmah from Moungmya and Watiya.

Scales.			Ventrals	Loreals	Praeocs.	Templs.	Labials*	Marginals	Length.
34·5	42	42	325	1 (L) 0 (R)	1	3	8 (34) (R) 8 (3) (L)	1	39¼″
...	...	...	...		...	...		...	...
33	?	46·7	325	1	3 (L)	3	9 (O)	1	41½″
...	...	...	...	...	2 (L)	...	...	...	...

* Bracketed figures touch Eye.

19. Enhydris curtus (Shaw).

Enhydris curtus, *Blgr. Cat. Snakes Brit. Mus.* Vol. III, p. 300.
,, ,, *Sclater, List Snakes Ind. Mus.* 1891, p. 62, No. 8241.
,, ,, *Wall in Journ. Bomb. Nat. Hist. Soc.* Vol. XVI, p. 310.
,, hardwickii, *Sclater, List Snakes Ind. Mus.* 1891, p. 62, No. 11531.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
8241	Puri	Sir J. Fayrer	30	38?	35	171
11531	Mergui	J. Anderson	...	...	...	...
13593	Ganjam coast	? ...	33?	40?	32	...
13798	Trivandrum	Trivandrum Mus. (Exchanged)	36	41	38	201
14547	Borneo	Sarawak Mus.	36	30?	34	...

Rostral,—portion seen above less than half the suture between the nasals. *Præfrontals* touch the 2nd supralabial. *Frontal*,—sutures cannot be compared owing to the parietals being usually broken up. *Temporals*,—two or three anterior. *Marginals*,—a complete row behind the 2nd infralabial (rarely, however, the 4th infralabial touches the labial margin). *Infralabials*,—4 or 5. The 4th largest, and in contact with three or four scales behind. *Sublinguals* poorly developed, so much so, that I do not consider they deserve the name. *Costals* juxtaposed throughout; the lowest three rows very distinctly enlarged, and some specimens (males according to Boulenger) with the tubercles in these enlarged rows remarkably spinose.

An easy snake to recognise for several reasons. The enlarged ventral costals are peculiar to this and *E. hardwickii*, and both have fewer ventrals than any others of the sea snakes (except the genus *Platurus*). Again the parietals are usually broken up, but in No. 11531 this is not so, and it was probably this unusual feature which led Sclater to include it among the *E. hardwickii*. The badly-developed sublinguals, and the juxtaposed character of the costals, even anteriorly, are also features unusual among the sea snakes.

20. Enhydris Hardwickii (Gray).

Enhydris hardwickii, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 311.
,, ,, *Sclater, List Snakes Ind. Mus.* 1891, p. 62, Nos. 8270, 11504, 11528, 11529, 11530, 11532, 11533, 11535, 11536, 11537, 11538, 11539.
,, ,, *Wall in Proc. Zool. Soc. Lond.* 1903, p. 96.

Rostral,—portion seen above less than half the suture between the nasals. *Præfrontals* touch the 2nd supralabial. *Frontal*,—parietal sutures largest but not twice the præfrontals. *Temporals*,—two, three or four anterior; the uppermost large, followed by two small scales bordering the parietal. *Marginals*,—two behind the 2nd infralabial; the 4th infralabial touches the labial border. *Infralabials*,—4 or 5. The 4th largest, and in contact with three or four scales behind. *Sublinguals*,—badly developed, in fact cannot be said to be present. *Costals*,—juxtaposed everywhere; the last three ventral rows very distinctly enlarged, and some specimens (males?) have the tubercles developed into remarkable spines on these enlarged rows.

It is a very easy snake to recognise. I believe it is the only sea snake in which the suture from the nostril normally runs to the 1st supralabial. In all other snakes where there is a suture at all it runs to the 2nd supralabial. I have examined upwards of 20 specimens, and this feature has been noticeable in all. On the other hand I have noticed the same condition in two aberrant specimens out of 20 in *E. curtus*, and in three examples out of 15 of *Distira ornata*. It differs normally from *E. curtus* in that the parietals are not broken up, and in the fact that there are no ventral shields (another feature peculiar to this snake). In *E. curtus* ventrals are not developed except anteriorly where, however, they are very distinct.

21. Enhydrina valakadyen (Boie).

Enhydrina valakadyen, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 302.
,, ,, *Sclater, List. Snakes Ind. Mus.*, p. 64.
,, ,, *Wall and Evans in Journ. Bomb. Nat. Hist. Soc.* Vol. XIII, pp. 347 and 616.
,, ,, *Wall in Journ. Bomb. Nat. Hist. Soc.* Vol. XVI, p. 311.

There are many examples, including Nos. 8220, 8689, 11512 to 11520, 13092, 13247, 13662, 13676, (*a* and *b*) 14477, 14491, 14694 and 14695.

Rostral,—portion seen above less than half the suture between the nasals. *Præfrontals* touch the 2nd supralabial normally (rarely not). *Frontal*,—parietal sutures

largest, but not twice the præfrontals.—*Temporals*,—one or two anterior, large, followed by small scales bordering the parietals. *Marginals*,—none. *Infralabials*,—5. The 5th largest, and in contact with three scales behind. *Sublinguals* badly developed, and not worth the name. *Costals* feebly imbricate.

A very easy snake to recognise by the deep furrow in the chin which is quite peculiar to this species. A corresponding downward projection of the rostral shield is equally characteristic. The absence of sublinguals, and the unusually numerous costals, especially anteriorly, are also remarkable. In some aberrant examples a piece of the nasal is detached to form a spurious loreal.

22. Platurus laticaudatus (Linn.).

Platurus laticaudatus.—*Blgr. Cat. Snakes Brit. Mus.* Vol, III. p. 307.
„ „ *Sclater, List Snakes Ind. Mus.* 1891, p. 61.
„ „ *Wall in Proc. Zool. Soc. Lond.*, 1903, pp. 96 and 101.

No. 8286. Penang. Capt. Lewis.
„ 8289. Calcutta.[1] Sir J. Fayrer.

Rostral,—in contact with six shields, of which the 1st supralabials are much the largest, Portion seen from above half or less than half, the suture between the internasals. *Internasals*,—a pair present. *Præfrontals* touch no supralabial. *Frontal*,—parietal sutures largest, but not twice the præfrontals. *Nasals*,—lateral, undivided. *Temporals*,—one moderate anterior, with two small scales behind bordering the parietals. *Marginals*,—a complete row behind the 3rd infralabial. *Infralabials*,—five. The 5th largest, and in contact with 3 or more scales behind. *Costals*,—imbricate everywhere. *Sublinguals*,—two well-developed pairs in contact.

This is evidently a rare snake in the Indian Seas, judging from the paucity of specimens in this large collection. There is no specimen in the Bombay Natural History Society's collection, nor have I met with any others in other Indian collections.

Many points serve to make the recognition of this and the next species very easy. The rostral touches 6 shields owing to the presence of a pair of internasals, which all other sea snakes lack. Of the 6 sutures, the first supralabials are by far the longest, and this alone will distinguish these two from every other snake, terrestrial or aquatic. The nasal shields are lateral. The ventrals are as broad throughout as in most land snakes, and the last is bifid.

This species has only 19 costal rows in midbody, a feature which is only shared by one other sea snake, *viz.*, *Distira jerdonii*. The ventral shields are peculiar in that they are keeled laterally, and that these keels occupy only the basal half of each shield, a character only seen in this species.

[1] Figured in Fayrer's Thanotophidia, Pl. XIX.

23. Platurus colubrinus (Schneid.).

Platurus colubrinus, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 308.
,, ,, *Sclater, List Snakes Ind. Mus.*, 1891, p. 62, Nos. 8285, 8287, 8288, and 12625.
,, ,, *Wall in Proc. Zool. Soc. Lond.*, 1903, pp. 96 and 101.

Museum No.	Habitat.	Donor.	Scales.			Ventrals.
			Two head's-lengths behind head.	Midbody	Two head's-lengths before vent.	
8285	Arakan	Capt. Abbott	23	25	23	331
8287	Nicobars	J. Wood-Mason	23	23	21	321
8288	,, ...	F. A. de Roepstorf ...	23	23	21	328
12625	N. S. Wales	Calcutta Exhibition ...	21	21	21	315
14572	Malay Archipelago ...	Roy. Nat. Hist. Soc., Batavia	23	23	21	223
14707	Port Blair, Andamans ...	C. G. Rogers	23	25	21	...

Rostral,—in contact with 6 shields of which the 1st infralabials make by far the largest sutures. *Internasals*,—a pair. *Præfrontals*,—three, none touching a supralabial. *Nasals*,—lateral, undivided, touch 3 supralabials normally. *Temporals*,—one anterior, with two subequal scales behind bordering the parietals. *Marginals*,—a complete row behind the 2nd infralabial. *Infralabials*,—four. The 4th largest, and in contact with 3 or more scales behind. *Sublinguals*,—two well-developed pairs, both in contact. *Costals*,—imbricate throughout.

An easy snake to identify. It is the only sea snake in which the frontal touches 7 shields, and this is in consequence of the triple præfrontals.

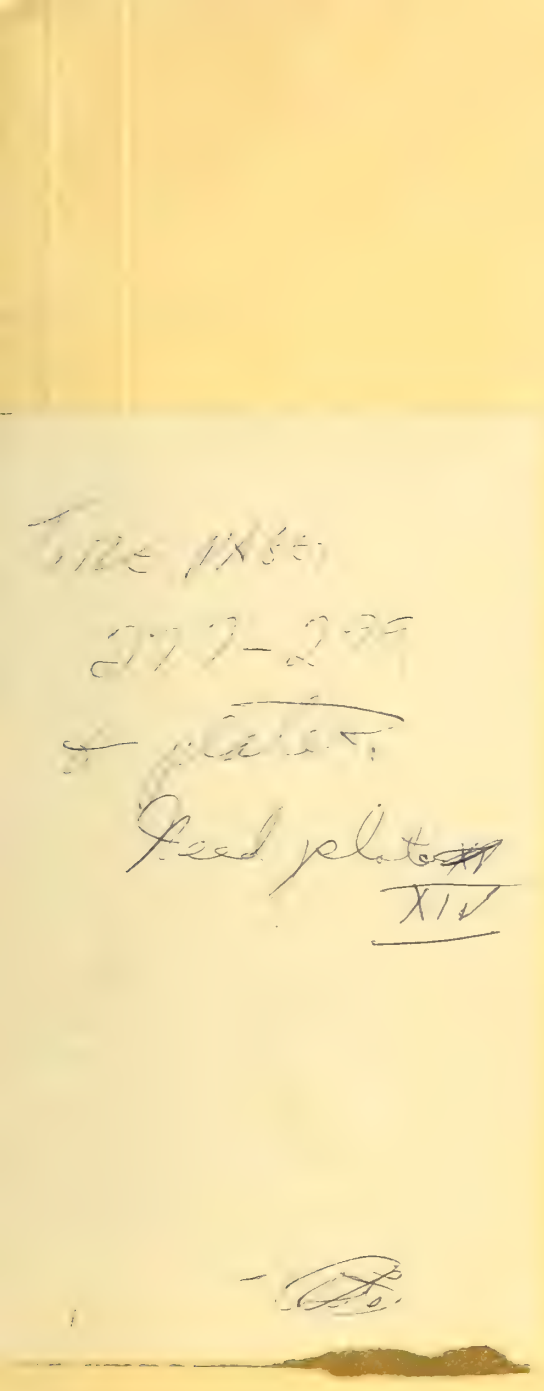
24. Hydrophis elegans (Gray).

Hydrophis elegans, *Blgr. Cat. Snakes Brit. Mus.*, Vol. III, p. 278.
,, ,, *Sclater, List Snakes Ind. Mus.*, 1891, p. 64, No. 4751.

Museum No.	Habitat.	Donor.	Scales.			Ventral.
			Two head's-lengths behind head.	Midbody.	Two head's-lengths before vent.	
4751	?	Brit. Mus. (Exchanged) ...	28?	35?	?	400?

Rostral,—portion seen above more than half suture between the nasals. *Præfrontals*, touch the 2nd supralabial. *Frontal*,—all sutures subequal. *Temporals*,—one anterior. *Marginals*,—a complete row after the infralabial. *Infralabials*,—suture between the first less than that between the anterior sublinguals. *Sublinguals*,—two well-developed pairs, both in contact. *Costals*,—imbricate everywhere.

One of the very few sea snakes which is not banded. The marks consist of oval, or circular dorsal spots and dots.



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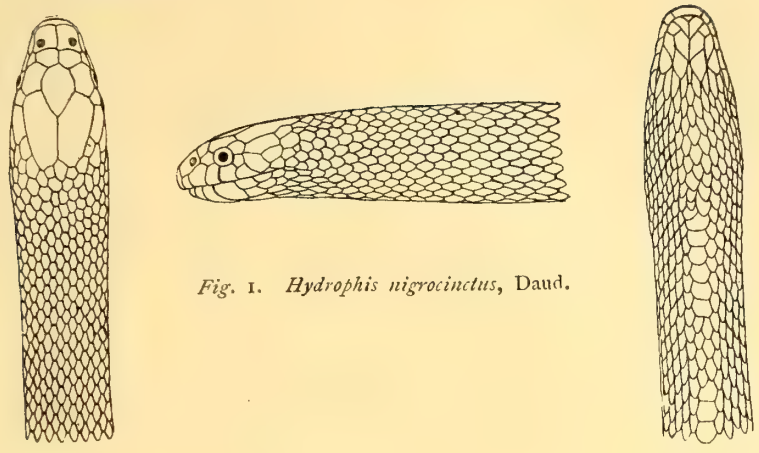

Fig. 1. *Hydrophis nigrocinctus*, Daud.

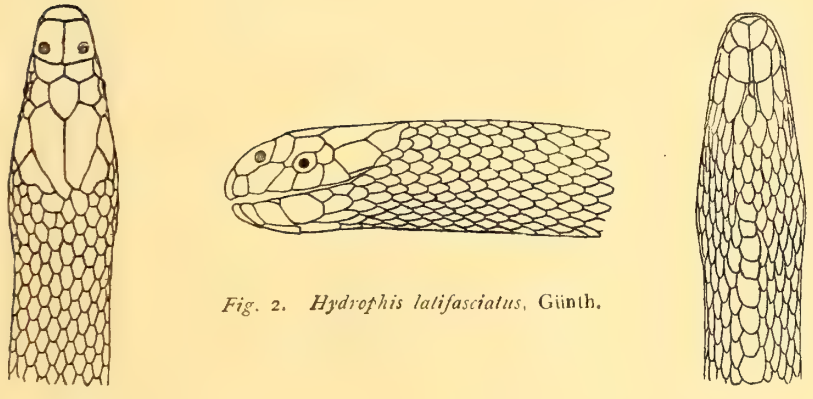

Fig. 2. *Hydrophis latifasciatus*, Günth.

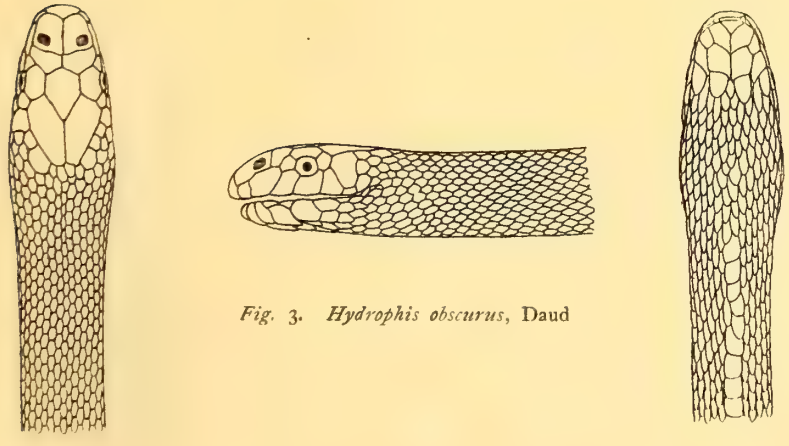

Fig. 3. *Hydrophis obscurus*, Daud

Fig. 1. *Hydrophis mamillaris*, Daud.

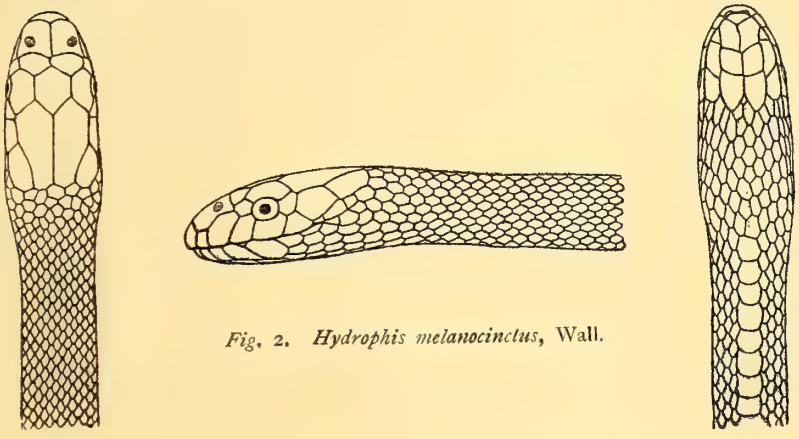

Fig. 2. *Hydrophis melanocinctus*, Wall.

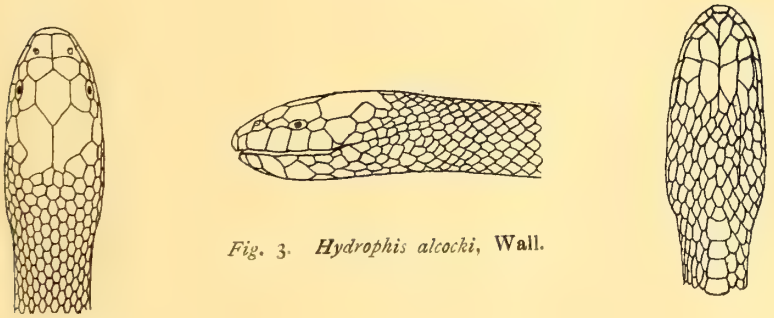

Fig. 3. *Hydrophis alcocki*, Wall.

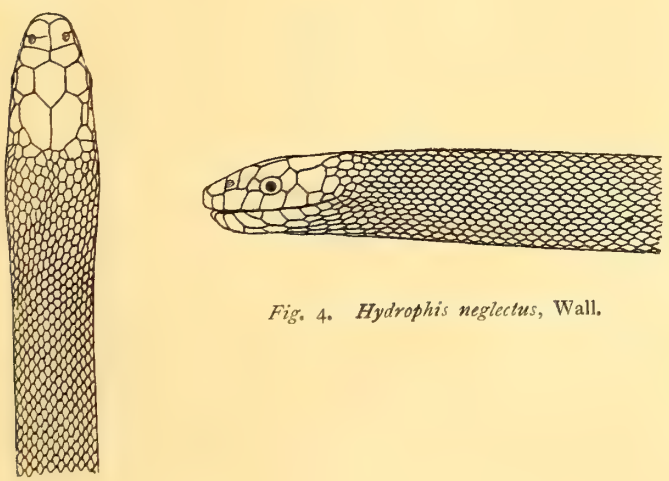

Fig. 4. *Hydrophis neglectus*, Wall.

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

VOL. I, No. 15, pp. 801–887.

PERSIAN SAWS AND PROVERBS.

BY

LIEUTENANT COLONEL D. C. PHILLOTT.

Smithsonian Institution,
OCT 12 1906
National Museum.

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7-6-06

Common Saws and Proverbs collected, chiefly from Dervishes, in Southern Persia.

By Lieutenant-Colonel D. C. Phillott, *Secretary to the Board of Examiners, Calcutta.*

INTRODUCTORY NOTE.

The following common saws and proverbs were collected, chiefly from dervishes and professional story-tellers, during a two years' residence in Southern Persia. Every saw or proverb was submitted to the criticism of at least three educated Persians in Persia, and those not receiving corroboration were struck out of the list. The residue has been revised by Muḥammad Kāẓim Shirazi, Persian Instructor to the Board of Examiners, who has further compared it with Roebuck[1] and erased all proverbs found in the collection of the latter. Some sayings that have their origin in well-known writings, but which do not occur in Roebuck, have been allowed to stand.

It is not to be supposed that the whole of these proverbs are current in any one district. Still every professional story-teller has a stock of two or three hundred. The story-tellers are, in most cases, illiterate men, and like most illiterate but intelligent people they have excellent and well-stored memories.

The list here given is perhaps only a small portion of the proverbs in common use to-day, in different districts.

1. "The ass's colt through its assinity, keeps ahead of its mother." (Said to a vulgar man that pushes himself forward.) *Cf.* 'Fools rush in where angels fear to tread.'

2. "By the time the calf becomes a cow, its master's patience is exhausted." (Said to one with a troublesome child.)

3. "Only a dog of Mazenderan can catch a Mazenderan jackal." *Cf.* 'Set a thief to catch a thief.' *Vide* No. 191.

4. "By the time I 've made you a man, I shall have become a donkey." (Said by a master to a boy or by a father to a son.)

5. "The winter has passed but the charcoal-seller's face is as black as ever"; (*i.e.*, 'Thanks, the necessity no longer exists, but the shame of not having helped me still remains with you').

6. "An old horse trained for a race is useful for the Day of Judgment." (Said to anyone who, late in life, starts learning a new subject.)

7. "I was born before my father was married"[2]; (*i.e.*, I'm an old hand and need no teaching; I know a thing or two). *Cf.* None can teach this dog tricks.

8. "He's learned without having troubled to read." (A taunt to a quack.)

9. * * * * * * *

(*i.e.*, 'You tal of the gain but say nothing of the pain'[3]).

10. "I prefer the trickling stream to the river torrent that rushes once in the year and remains dry the remainder." (I prefer profits small and sure to profits large and risky.)

11. "A hundred sparrows with their chirpings are half a *mann*:[4] kill an ox whose one thigh is thirty *mann*." (Advice of Vazir to Governor not to loot small fry.)

12. "A swift horse trips." *Cf.* 'The more haste the less speed: slow and sure.'

13. "A snapped rope may be tied but the knot remains"; (*i.e.*, a quarrel may be made up but a soreness remains; a wound may be healed but the scar remains).

1 "A Collection of Proverbs and Proverbial Phrases in the Persian and Hindustani Languages" by Thomas Roebuck, Calcutta, 1824.

2 This implies not 'bastard' but 'wide awake.'

3 عوام الناس يتباهون بطول مذاكيرهم وقلتها

4 Seven Indian seers go to 1 Tabrizi *mann*.

امثال

1. کرّهٔ خر از خریت پیش پیش مادر است

2. گوساله تا [1] گاب شود دل صاحبش [2] آب شود

3. شغال بیشهٔ ما زندران را
نگیرد جز سگ ما زندرا نی

4. تا [2] میرم ترا آدم کنم خودم خر میشوم

5. زمستان رفت اروسیاهی بزغال فروش ماند [3]

6. اسپیکه در پیری [4] سوغان بگیرند برای میدان قیامت خوب است

7. من بچهٔ پیش از [5] قباله هستم

8. نخوانده ملّا است

9. شما تعریف کلفتی کیر بابا را میکنی امّا خبر از کُس مادر نداری

10. من آب باریک را بهتر از سیلاب رود خانه میدانم که سالی یکبار بیاید واباقی سال خشک میباشد

11. صد تا گنجشک [6] باجیق و جیقش [6] نیم من است
گاوی بکش که گردانش سی من است

12. اسپ تیز رو سکندری میخورد

13. چون رشته گسیخت میتوان بست
لیکن گره هیش در میان است

[1] *Gāb* vulg. for *gāv* (and *au* vulg. for *āb*).
[2] *Mī-ram* vulg. for *mī-ravam* : *tā bi-yāyam* could be substituted.
[3] *I.e., bi-ḥālat-i pīsh māND.*
[4] *Saughān k.* to train for a race, etc. (of horses).
[5] *Qabāla* = marriage ceremony.
[6] *Jīq u jīq*, chirping of small birds.

14. "I break the tie of my friendship that perchance when the knot is tied I may become closer to you." (As the two ends of the knotted string become nearer to each other.) (A reply to No. 13.)

15. "He who travels by night reaches his stage during the day:
He who sleeps by night brings ruin on himself."
(He that toils, succeeds; and he that is lazy, fails.) *Cf.* 'No gains without pains.' *Vide* also No. 30.

16. (*a*) "He commences to mourn before the death."
(*b*) "He cries out before he is hurt."
(*c*) بكى قبل أن يلطم
(*d*) "He weeps before the recital of the martyrdom."
(*e*) "He takes off his shoes before he reaches the stream."

17. "If fruit hangs over the garden wall, every passer-by will stone it." (Look after your valuables. Often with reference to a wife.)

18. "He is so stingy that if even the gutter pipe [1] of his roof be pointed into the street he can't sleep."

19. "He always makes a poor mouth" (cries poverty).

20. *Servant*—"My work is like a cook's; as you pay, so is your messing."
Master—"A willing horse is given abundant fodder."

21. "To drink deep and keep sober is easy:
If you rise in life and don't become swollen-headed (drunk), then you're a *man*."
Cf. Judge no man until he's seen success.

22. "Good juice from fruit comes without squeezing;" (*i.e.*, love is not by forcing).

23. "My father was minister to the King. What's that to do with *you?*" (Said to one boasting of his ancestors: *i.e.*, personal worth alone counts.) *Cf.* 'True worth is more than Norman blood.'

24. "An innocent man may get as far as the foot of the scaffold but he will not mount it" (*i.e.*, he will escape actual punishment).

25. "New sleeves do you eat the *pilo*." (This saying is attributed to *Bahlūl*, the brother of *Hārūnu r-Rashīd*. Ill-dressed, he was refused admittance to a feast so he donned a gown with flowing sleeves and was admitted with honour.) *Cf.* 'Gude claes open a' doors.'

26. "They have made this camel lie down at my door. (They have forcibly tracked this matter to me.)

27. "You will be given butter according to the quantity of your *dūgh*." (Said to a master that expects much from an ill-paid servant.)

28. "Don't take up a morsel larger than your mouth"; (*i.e.*, a small man should not undertake too great a work). *Cf.* 'He has bitten off more than he can chew.' *Vide* No. 132.

29. "If you wish to avoid disgrace, do as men do." *Cf.* 'In Rome do as Rome does.'

[1] *Nāvdān* of earthenware and of practically no value.

14. پیوند دوستي، من از آن پـــاره مي کنـــم
شایـــد گـــره خورد بتو نزدیک‌تر شوم

15. هر که بشب راه رفت روز بمنزل رسید
هر که بشب خواب رفت خاک بسرمیکند
تا شب نروي روز بجائي نرسي

16. (*a*) پیش از مرگ ماتم میگیرد or پیش از مـــرگ واویـــلا
(*b*) پیش از چوب گریه کردن
(*c*) پیش از چون [1] دادن گریه
(*d*) پیش از روضه خواني گریه میکند
(*e*) هنوز بآب نرسیده کفش از پایش بیرون میکند

17. هر میوهٔ که سرش از باغ بیرون باشد هر کس از راه میگذرد بران سنگ میاندازد

18. فلان شخص اینقدر بخیل است که شب اگر نادانِ خانه اش در بیرونِ کوچه باشد خوابش انمي‌برد

19. همیشه داد از نیستي مي زند

20. نوکر :— کار ما مثل آشپزي مي ماند هرچه میدهي آش میخوري
آقا :— اسپ رونده [2] کاه وجوش را زیاد میکنند

21. باده پر خوردن و هشیار نشستن سهل است
گر بدولت برسي مست نگردي مردي

22. شیره [3] آنست که خودش بیاید

23. " پدر من وزیر سلطان بود " " بتوچه ؟ "

24. آدم بی گنه پی دار میرود سردار نمیرود

25. آستین نو تو پلو بخور

26. این شتر را در خانهٔ من خوابانیدند

27. بقدر دوغت مسکه [4] میزنند

28. تکهٔ بزرگتر از دهن بر ندار

29. خواهي نشوي رسوا همرنگ جماعت شو

[1] *Chūn* here = *kūn*. [2] *Asp-i ravanda* 'a willing horse.' [3] *Shīra*, fresh juice of fruit ; also boiled syrup.
[4] In Persia butter is made from *dūgh* which is *māst* mixed with butter.

30. "When the camel wants its ration, it raises its head." (He who wants a thing must exert himself.) *Cf.* 'No pains no gains.' *Vide* No. 15.

31. "You're like the cow that gave nine seers of milk, but after milking kicked over the full pail." (Said of a person that effaces a kindness by an injury.)

32. (*a*) "The more the camel hates the *jāz* [1] the more he meets it."

(*b*) "The more the snake hates mint, the more the mint grows at the mouth of its hole."

(Said to one who dislikes a thing and is always coming across it.)

33. "Have you eaten sparrow-heads, that you are chattering like this?"

34. "A fox fell into a vat of indigo and exclaimed:—'I am a peacock of the Seventh Heaven.'" [2] (Said to one that makes a boast of what is a misfortune for him.) *Cf.* 'The fox that lost its tail.'

35. "While your hand is in the butter rub a little on my hair"; (*i.e.*, While in a fat billet give me a few pickings).

36. "He like a sick ass, and they like lazy dogs are waiting for his death." (Said of expectant heirs.)

37. "Nothing is better than resignation."

38. "When the fountain reaches to a height, it falls headlong." *Cf.* 'Pride and a fall.'

39. "Whatever your hand touches becomes devoid of luck." (Said to an unlucky person.)

40. "In truth is salvation."

41. "The camel mounts a minaret and cries
'Lo here I'm hidden: expose me not.'"

(Said to a knave or a fool who does ill and says 'keep it secret.')

42. "The uglier the ape the more amusing its tricks." (Said to a wag or to an invalid that shirks nasty medicine.)

43. "Till it straightens itself the snake can't enter its hole." Till the knave forsakes his knavery he won't succeed; *or* 'I won't let you off till you tell the truth.'

44. "Hunt like the lion that foxes may live by you." (Said to a merchant that thinks only of small ventures, or to a beggar.)

45. "The bridal procession is at the door and the bride has gone to the W.C." (Said to one who does things at the wrong time.) *Vide* Nos. 46 and 104.

46. "When the game is started the greyhound commences to—." (As above.)

47. "The jackal either runs or howls." [3] (Said by a servant asked to do more than one work.) *Cf.* 'I canna baith spin and rin,' *and* 'No man can sup and blow at once.'

48. "By the time you have armed yourself the battle is over." (To a slow or idle person.)

49. "The knife has reached the bone."; (*i.e.*, 'The last straw,' *or* 'Matters have reached their worst').

[1] *Jāz* is a thorn disliked by camels.

[2] *i.e.* the Highest Heaven.

[3] It is supposed that a jackal can't howl and run at the same time.

30. شتر که نواله میخواهد گردنش را دراز میکند

31. تو مثل گابِ نه‌من شیر مي ماني وقتیکه ترا دوشیدند لکد میزني شیرها را میریزي

32. (*a*) شتر هرقدر از جاز بدش مي آید بیخ گوشش سبز میشود
(*b*) مار که از پودینه بدش مي آید دم سوراخش سبز مي شود

33. سر گنجشک خوردي که اینقدر حرف میزني ؟

34. روباهي افتاد در خُم نیل گفت " منم طاوس علیین * "

35. تا دستت در روغن است دست چربي بسرم بمال

36. او چون خر بیمار واینها چون سگ بیکار منتظر مرگش هستند

37. هیچ چیز بهتر از گردنِ تسلیم نیست

38. فقاره [1] چون بلند شود سر نگون شود

39. دست تو بهر چه آشنا شد
خیر و برکت از او جدا شد

40. راستي رُستگاریست

41. بسر مناره اشتر رود و فغان برآرد
که منم نهان بدینجا مکنید آشکارا

42. میمون هرچه زشتر است بازیش خوشتر است

43. مار تا راست نشود داخل سوراخ خود نمیگردد

44. مثل شیر شکار بکن تا روباه از دولت سرِ تو بِخورد

45. زفاف آمده است و عروس رفته است سر آب

46. تازي وقت شکار ریدنش میگیرد

47. شغال یا میدود یا زوزه میکشد

48. تا تو میري [2] اسلحه به پوشي جنگ تمام شده است

49. کارد باستخوان رسید

1 Vulg. for *favvāra*, "fountain."

2 *Mī-rī* vulg. for *mī-ravī*.

50. "Be a whole man, or be half a man [1] or still be a b—y fool"; (*i.e.* don't be half and half: be one thing or the other.)

51. (*a*) "My *gilīm* was originally woven black."

(*b*) "If the *gilīm* of one's fate be woven black, not the waters of Zamzam nor Kauṣar will wash it white."

(One fated to ill-luck cannot have good luck.)

52. (*a*) "The sun can't scorch more, nor the slave be burnt blacker."

(*b*) "There is nothing blacker than black."

(I can't be more unlucky than I am.)

53. "My face is red from slaps and not from health: from starvation my legs refuse their office." (Said to a poor man; you must not judge by appearances.)

54. "The moon with all her splendour is hidden three days a month, but your face is with us always." (Said ironically to a troublesome person.)

55. "Why pipe to one that is deaf, why dance to one that is blind?" *Cf.* 'Why cast your pearls before swine?'

56. "If a mulla stretch out his hand to a dish of food, he won't rest till he has plunged it deep into its butter." (Applied to the poverty and greed of mullas.)

57. "Kill yourself by smoking your fill; the opium's free." (A taunt.)

58. "A hundred like you I've taken to the stream, and by cunning brought back thirsty." (I'm smart enough to have taken in a hundred like you, and do you try and get the better of me?)

59. "Take care he doesn't trick you." (Origin obscure.)

60. "Forty years I've been a faithful dog here, and I am now a confidential servant." (Said by a servant to a recruit claiming equality.)

61. "Nothing more uniform have I seen than an egg:
Break it, and two colours are disclosed."

(No man is the same inside and out.)

62. "You are like stone-cakes: different on each side." (As above.)

63. "He's only alive because he's too poor to buy a shroud." (Said of a poor or wretched person.) *Cf.* 'He can't afford to die as he has'nt enough money to pay for his funeral expenses.'

64. (*a*) "A ladder is mounted step by step."

(*b*) "God created the world by degrees."

Cf. 'Step by step climbs the hill.'

'Go slow: Rome was not built in a day.'

65. "You're like a brother that —: there's no gain and no sense of obligation."

إِنَّمَا عَمَلُكَ كَأَخٍ يَلُوطُ أَخَاهُ لَا أَجْرَ فِي ذَلِكَ وَلَا مِنَّةَ

66. "May your bread be ever tied to the gazelle's horn"; *i.e.*, be difficult to get. (A curse.)

[1] Half a man; 'a coward; a tailor.' Don't be 'half partridge half quail.'

50. یا مردانهٔ مرد باش یا نیم مرد باش یا هپله هپو [1]

51. (*a*) از قدیم گلیم مرا سیاه بافته اند

(*b*) گلیم بخت کسی را که بافتند سیاه
بآب زمزم و کوثر سفید نتوان کرد

52. (*a*) نه آفتاب ازین گرمتر میشود نه غلام ازین سیاه‌تر

(*b*) بالا تر از سیاهی رنگی نیست

53. ما روی خود را از سیلی سرخ داریم [2] و الّا از زور گرسنگی قوت زانو نداریم

54. ماه بچنین روشنائی هر ماهی سه شب پنهان است ولی صورت تو تمام وقت آشکار است

55. چه از برای کرساز بزنی و چه از برای کور برقصی

56. دست ملا اگر بقاب رسد
بُکند ژرف تا بآب رسد

57. بکش خود را عجب تریاک مفتیست

58. من صد تا مثل شما را سر جو میدرم و تشنه بر میگردانم

59. شیره بسرت نمالد

60. من چهل سال است درین خانه مثل سگ پارس [3] کرده ام تا حالا محرم شده ام

61. یک رنگتر ز بیضه ندیدم درین جهان
چون پرده اش دریدم دیدم دو رنگ هست

62. تو مثل نان ساجی [4] می مانی دو رو هستی

63. از بیکفنی زنده است

64. (*a*) از نردبان پلّه پلّه بالا باید رفت

(*b*) خدا دنیا را بصبر آفرید

65. کار تو مثل برادریکه کون برادر بگذارد ؛ نه مزد است نه منت

66. همیشه نانت بشاخ آهو باشد

1 *Haplahapū* (slang), "half witted" (though not an idiot).

2 Note this use of والّا = "How can it be otherwise when"—or "If you say it is from any other cause, then I will say—."

3 "To bark, keep watch" (of a dog): for *pās kardan*.

4 *Nān-i sājī*, bread cooked on pebbles; the upper side is smooth, the under indented by the pebbles.

67. "May your water be warm and your bread cold (sodden) for I'm harried to death by you." (Father to son: a curse.)

68. Opposite to above: a blessing.

69. "You saw the penis: didn't you see the pumpkin?[1]" (*i.e.*, you saw my gain but you didn't see the trouble I was put to.)

70. "My heart is not a table-cloth to be spread before all comers": *i.e.*, I can't tell everyone my secrets. I don't wear my heart on my sleeve.

71. "A pen-knife doesn't cut its own handle." (A man doesn't injure himself or his belongings.) *Vide* No. 192. *Cf.* 'Corbies dinna pike out corbies' een.'

72. "Even a *Qāẓī* will indulge in free drinks." (You can't hesitate when a thing is free.)

73. "This year's sparrow-brood is teaching last's." *Cf.* 'Teach your grandmother.'

74. "One should be like *k̲hākshīr* and agree with all temperaments."

75. "May God cut off a portion of his life and add it to his brains." (Said of a fool.)

76. "I talked to him till hair grew on my tongue"; (*i.e.*, till I was tired out).

77. "A broken arm can toil but not a broken heart."

78. "If you are as long-lived as an ass, I'm as patient as a waiting dog"; (*i.e.*, I'm not going to be worn out; you won't get out of my clutches.)

79. "There is a laughter that follows every weeping." *Cf.* Every cloud has a silver lining.' *Vide* Nos. 80 and 157.

80. "Every 'up' has a 'down.'" (As above.)

81. "The Ḥājī's dead; well, his camel is spare." *Cf.* 'It's an ill wind.'

82. "If you want to be respected don't play with children and slaves." (Don't mix with inferiors.)

83. "A glad heart or a sorrowful—it's all the same to us"; (*i.e.*, Do it or not, as you please; let it happen or not.)

84. "Were you to draw him on the door of the W.C., the paper[2] would fall from one's hand." (Said of an ugly person.)

85. "I went to him to blow his nose and by accident put out his eye." (I tried to do him a good turn but did him a bad one (as for instance by putting in a good word for him with his master who took it ill). *Cf.* 'Bid a man to a roast and stick him wi' the spit.'

86. "What do you expect from a hairless palm?" *Cf.* 'You can't get blood out of a stone.'

87. "I never raised my head from the knee of sorrow."

88. "A tank without water wants no fish." *Cf.* 'A blind man needs nae looking glass.'

89. "A man who has no room requires no carpet." (As above.)

[1] *Vide* Note 2, p. 311.

[2] *Āftāba* is a long-necked brass vessel used in all ablutions.

67. آبت گرم و نانت سرد [1] که از دست تو من مردم

68. آبت سرد و نانت گرم

69. تو کیر را دیدي و کدو را ندیدي [2] ؟

70. دل که سفره نیست که آدم پیش همه کس وا کند

71. چاقو دستهٔ خود را نمي برد

72. شراب مفت قاضي هم میخورد [3]

73. گنجشکهای امسالی گنجشکهای پارسالی را یاد میدهند

74. آدم خوب است مثل خاکشیر [4] بهمه طبیعت سازگار باشد

75. خدا از عمرش بر دارد و روی عقلش بگذارد

76. من زبانم مو در آورد از بسکه باین نصیحت کردم

77. دست شکسته کار میکند ولیکن دل شکسته کار نمي کند

78. اگر تو خر دیر بمیري هستي من سگ انتظار کشی هستم

79. هر گریهٔ هم از عقبش یک خندهٔ دارد

80. هر سرازیری یک سربالائی هم دارد

81. حاجي مرد شتر خلاص

82. اگر خواهي که با مقدار باشي
مکن با کودک و با بنده بازي

83. پیش ما خاطر شاد و دل غمناک یکیست

84. شکلش را اگر در خلا بکشي آفتابه از دست آدم مي افتد

85. رفتم دماغش پاک کنم چشمش را هم کور کردم

86. از کف دست که مو ندارد شما چه میخواهي

87. هرگز سرم ز کاسهٔ زانو جدا نشد

88. حوضیکه آب ندارد لازم بماهي نیست

89. شخصیکه اطاق ندارد فرش هم لازم ندارد

1 *Bāshad*, understood.

2 From a well-known story of a lady and her slave girl.

3 In Urdu مفت کي شراب قاضي کو بھي حلال

4 *Khākshīr*, a medicinal seed that agrees with all temperaments.

90. "First dig the well[1] and then steal the minaret." (Make preparations beforehand.)

91. "What is a dog that you should be its fur?" (Said to a subordinate to deride him through his master.)

92. "He winnows in the direction whence the wind blows." (He is all things to all men; a time-server.)

93. "A servant without pay or ration bosses his master"; (*i.e.*, he is negligent). (Said to one who doesn't pay his servants.)[2]

94. "He who depends on his neighbour goes supperless to bed"; (*i.e.*, his neighbour disappoints him). (Everyone must strive for himself.)

95. "'The bride wears nine *tumbān*.' 'Her fat bottom is obliged to her; what have *I* to do with it?'"

96. "You're like a double-toothed saw" (that cuts whether drawn backwards or forwards.) (Used of one that runs with the hare and hunts with the hounds.)

97. "Refreshment does not fill the belly but it does strengthen friendship." (Might be said to a host that omitted to offer sweets or tea.)

98. "Love from both sides is good: from one side only it is irksome." (Friendship or liking must be mutual.)

99. Another form of No. 98.

100. "In at one ear and out at another." (To a careless person.)

101. "A friend in prosperity, a stranger when out of office" (*i.e*, a fair weather friend).

102. "These false friends you see
Are flies round the sugar."
(Same as No. 101.)

103. "A wound by the tongue is worse than one by the sword."

104. "He's a cock that crows at the wrong time." (He does things out of season.) Compare Nos. 45 and 46.

105. "Domesticity is next to godliness." (Said by a woman to her husband.)

106. "A penniless lover eats *kangar*"[3]; (*i.e.*, is neglected). *Vide* No. 338.

107. "I have reached old age in this world:
O youth! where art thou? Blessed be thy memory."
(Said by an old man lamenting his lost youth.)

108. (*a*) "None that sowed barley, reaped wheat."
(*b*) "What you sow you'll reap."
Vide Matt. vii. 16. *Cf.* 'As ye brew sae ye maun drink,' *and* 'As ye mak your bed sae ye maun lie on't.'

109. (*a*) "He that has no brother has no strength in his legs."
(*b*) "He that has no child has no light in his eyes."

[1] The well is to conceal the minaret when stolen

[2] Servants in Persia seldom get fixed pay. They get clothes and food, and must 'make' what they can.

[3] *Kangar*, a tasteless mountain vegetable somewhat resembling the artichoke: it is cooked and usually eaten with *māst*.

90. باید اول چاه را کند و بعد منارہ را دزدید

91. سگ چه چیز است که پشمش باشي

92. از هر طرف که باد مي آید او اوشین [1] میکند = (او هم راه باداست)

93. نوکري که جیرہ و مواجب ندارد آن نوکر تاج سر آقا ست

94. هرکس بامید همسایه بنشیند شب بی شام میخوابد

95. " عروس نه تنجان دارد " " منت بکون گندۂ خودش بمن چه ؟ "

96. تو مثل ارّۂ دوسر مي مانی

97. لقمه شکم را سیر نمیکند اما محبّت را زیاد میکند

98. محبت خوب است از هر دوسر باشد از یکطرف دردِ سر است

99. چه خوش بي [2] مهرباني هر دو سر بي
زیک سر مهرباني درد سر بي

100. ازین گوش مي شنود و ازآن گوش بیرون میکند

101. در وقت نعمت یار در هنگام عزلت [3] اغیار

102. این دغل دوستان که مي بیني
مگسان اند گرد شیریني

103. زخم زبان بدتر از زخم شمشیر است

104. مثل خروس [4] بي محل میخواند

105. عیال پرستي خدا پرستیست

106. عاشقیکه پول ندارد کنگر میخورد

107. به پیري رسیدم درین کهنه دهر
جواني کجائي که یادت [5] بخیر !

108. (*a*) کسي جو نکاشت که گندم درو کرد

or

(*b*) هرچه میکاري میدروي

109. (*c*) هرکس برادر ندارد قوت زانو ندارد

or

هر کس فرزند ندارد روشنائي چشم ندارد

[1] *Aushīn k.* (for *afshān*), " to winnow " ; *aushīn* " winnowing fork.'

[2] *Bī* is the Kurdi for *bāshad*.

[3] *Aghyār*, pl. of *ghair* but here used as a singular.

[4] A cock that crows early in the night is unlucky.

[5] *Bād* understood. *Yād-ash bi-khair* always said when mentioning one absent.

110. "A loaded gun frightens one man; an unloaded one, two"; (*i.e.*, in the first case the bearer of the gun is brave; in the second both the bearer and the enemy are in a fright).

111. (*a*) "A boast in a strange country," (where none knows or can contradict the speaker).

(*b*) "A — in the street of the coppersmiths."[1]

112. "A stranger-thief unwittingly goes to the fodder-box." (As he does not know the ins and outs of the place. Said to an amateur or beginner in a business.)

113. "A copper and an earthen *āftāba* both serve the same purpose: if their price be looked into the latter costs a penny and the former five shillings."

114. "A cow that contracts the habit of eating merd can't be cured." (Said to one repeatedly checked for the same fault.)

115. "An egg-stealer will at last develop into a camel-stealer." *Cf.* 'He that will steal a pin will steal a better thing.'

116. "The more you lament the more is your loss;" (*i.e.*, lamenting is no use.) *Cf.* 'It's no use crying over spilt milk.'

117. "This world has many ups and downs for the sons of Adam." (Nothing lasts: there are ups and downs in life.)

118. "Nobody's lamp burns till morning." (Same as above.)

119. "One who pays cash is treated like a partner"; (*i.e.*, is trusted).

120. "I came to your house and you didn't even give me a drink of water: you tell me to go and you will send bread after me." (Said to one whose fair promises cannot be trusted.)

121. "The water-mill is served by turn"; (*i.e.*, first come first served: the first comer gets his corn ground first).

122. "To have the confidence of men is better than riches." *Cf.* 'A good name is rather to be chosen than great riches: Prov. xxii.'

123. "None of these shopkeepers' praisings of goods; (*i.e.*, no self-praise).

124. "Why talk rot?"

125 *Seller*:—"Either buy it at its proper price or take it from me as a gift (obligation)."

Buyer:—"There can't be both price and obligation"; (*i.e.*, 'What you say is true; I'm paying a price').

126. "A callow sparrow will swallow mulberries whole: when grown up it skins a millet seed." (When a man is young he acts thoughtlessly; when he grows older he is cautious.)

127. "Setting him aside, his father even hasn't dreamt such a thing." (An emphatic way of discrediting a claim or boast.)

128. "One can find out all about a man in two days, and about a beast in four." (*i.e.*, it is easier to understand a man than a horse.)

[1] The noisiest street in the city.

110. تفنگ پُر یک نفر را میترساند امّا تفنگ خالي دو نفر را [1]

111. (*a*) لاف در غربت زدن

(*b*) گوز به بازار مسرگري

112. دزد نا بلد خود را بکاه‌دان میزند

113. آفتابه مسي و آفتابه گلي از ایشان یک کار مي آید ولیکن پای قیمت که رسید
این یک پول است وآن یک تومان

114. گاویکه به گُه خوردن عادت کرد [2] محال است که علاجش را بکنند

115. تخم-دزد آخر شتر-دزد میشود

116. هرچه غصه بخوري از کیسه ات رفته است

117. این دنیا پست و بلندي برای اولاد آدم بسیار دارد

118. هیچ کس هرگز چراغش تا صبح نمي سوزد

119. آدم خوش حساب شریکِ مالِ مردم میباشد

120. بخانه ات آمدم آب هم ندادي میگوئي برو از عقب نان میفرستم

121. آسیاب نوبت دارد

122. اعتبار به از دولت [3] است

123. این بازار-تیزیهارا برای من نکن

124. حرف بی معني چه خاصیت دارد ؟

125. فروشنده :— " یا قیمت تمام یا منت تمام " *
خریدار :— " هم قیمت و هم منت نمیشود " *

126. گنجشک [4] گوشتالو توت درست فرو میبرد
وقتیکه بزرگ میشود ارزنرا پوست میکند

127. او که بجای خود پدرش هم در خواب ندیده است

128. دو پا بدو روز چار پا به چهار روز شناخته مي شود

[1] Note the idiomatic *rā*.
[2] A habit of improperly fed cows.
[3] Vulgarly pronounced *bih zi daulat*.
[4] *Gūshtālū*, "all flesh, fleshy, *i.e.* naked, callow."

129. "Pigeons that cost a penny a pair don't cry *Yā Karīm*." *Cf.* 'You can get nothing for nothing and devilish little for a penny.'

130. (*a*) "The district has a Governor."

(*b*) "There's a Police-Inspector in the *bazar*."

(You can't do wrong with impunity.) *Cf.* 'There is a God in the Heavens.'

131. "You must not take exception to what a Governor or a Doctor does." (Reference to a well-known anecdote.)

132. "Cook only as much as you can eat." (Take that amount of work that you can discharge.) *Vide* No. 28.

133. "Don't speak words larger than your mouth." (Don't talk above your station, *or* Don't make absurd claims.) *Cf.* 'Keep your tongue between your teeth.'

134. "First get up and wash your own filthy trousers and *then* admonish me." *Cf.* 'The kettle calls the pot black.'

135. "He's drunk without wine; encourage him and he'll get worse." (Don't encourage him to show off; it only makes him worse.)

136. "It was said to a sparrow, 'Stick a minaret up your fundament.' The sparrow replied, 'Say something that's possible.'" (The second part of this—*chīz-ī bi-gū ki bi-gunjad*—has many obvious applications.)

137. "Smoke arises from large logs" (but small chips flare up at once without effect). (Important things that last are done by important people). *Cf.* 'Great deeds and great men.'

138. "The bowl is hotter than the broth." (Generally used by a relation in the sense of 'blood is thicker than water; I *must* like you more than an outsider does.' Also applied to one more zealous than his superior, as 'The witness is more zealous than the principal').

139. "Do unto others as you would they should do unto you."

140. "Health is wealth."

141. "Every sore has its salve."

142. "Silence gives consent."

143. "He who seeks will find." (By trying comes success).

144. "To kill two birds with one stone."

145. "A hungry cat dreams of fat" (*i.e.*, the most delicate part of the flesh). *Cf.* 'A cat dreams of mice.'

146. "Outwardly a sheep; inwardly a wolf." *Cf.* 'A wolf in sheep's clothing.'

147. "Thorns and weeds[1] succeed the rose." (Said when a good thing has gone and a bad succeeded it; as when a man loses a pretty wife and marries an ugly one).

148. "In the place of the Moon sits the blind[2] *Scorpio*." (As above).

149. "No rose without a thorn."

[1] *Khār* "brambles"; *khāshāk* is the grass and thistly weeds after they are burnt up by the sun.

[2] Anything blind is mischievous as well as ugly. The sign Scorpio is unlucky. No Persian will commence a work when *Qamar dar 'aqrab ast*.

129. [1] کفتر جفتي صنار [2] يا کريم نمي خواند

130. (*a*) ولايت حاکم دارد or محتسب در بازار است

131. بکار حاکم و حکيم نبايد ايرادي گرفت

132. اينقدر به پز که بتواني بخوري

133. حرف از دهن بزرگتر نزن

134. تو وخيز [3] برو [4] خشتک پر از گهت را بشور انوقت بيا کار ياد من بده

135. بي مي مست است زير بغلش را که ميگيري مستي اش زياد تر ميشود

136. گنجشک را گفتند که "منارہ بچونت" * گفت "چيزی بگو که بگذجد"

137. دود از کُنده بر ميخيزد

138. کاسه از آش گرمتر

139. برکس مپسند انچه ترا نيست پسند

140. سلامتي بهترين نعمتهاست

141. خدا درد را [5] داده و دوا را [5] هم داده

142. سکوت موجب رضاست

or

السکوت علامة الرضاء

143. عاقبت جوينده يابنده است

144. يک سنگ و دو چغوک [6] =(چه خوش بود که بر آيد بيک کرشمه دو کار)

145. گربهٔ گرسنه پيه بخواب مي بيند

146. در ظاهر ميش و در باطن گرگ

147. بجای گل بروید خار و خاشاک

148. بجای مه نشيند عقرب کور

149. جائيگه گل است خار هم هست

or

جائيکه پري رخيست ديوي با اوست

or

هر جا که فرشته ايست ديوي با اوست

[1] *Kaftar-i 'Yâ Karîm'* a pigeon that is supposed to coo *Yâ Karîm*, one of the 99 attributes of God, and is prized accordingly.

[2] *Ṣannār* for *ṣad-dīnār*, a 2-shahi copper coin.

[3] *Vā-khīz* and *vakhī*, vulg. for *bar-khīz*. *Khishtak*, the inside of the trousers.

[5] *Rā*, here vulgar.

[6] *Chughūk* in Kirman is a "sparrow,"

150. "Unless there were something, people wouldn't say things." *Cf.* 'No smoke without fire.'

151. "The slave went to the stream to draw water: the stream came down in flood and carried off the slave." (Said of one who instead of a gain meets a loss).

152. "A hint to the wise is sufficient." *Cf.* 'A word to the wise is enough,' *and* 'Half a tale is enough for a wise man.'

153. "A guest that tarries long is a burden." (To outstay one's welcome).

154. "He that has money has might." *Cf.* 'Might is right.'

155. (*a*) "What comes from the wind (any windfall) goes to the wind' (is wasted).

(*b*) "The gains by — are spent on the curing of piles."[1] *Cf.* 'Lightly come lightly go.'[2]

156. "Weeping *in* season is better than laughing *out* of season." (Same as No. 163).

157. "Many a hope there is in despair. The end of a dark night is light." *Cf.* 'The longest lane has a turning.' *Vide* Nos. 79 & 80.

158. "A negro does not become white by bathing." *Cf.* 'Can the Ethiopian change his skin or the leopard his spots." *Jer.* xii. 23.

159. (*a*) "The lamp that is lawful at home is unlawful in the mosque."

(*b*) "First self; then the beggar." *Cf.* 'Charity begins at home.'

160. "An empty drum and much noise." (Said of a vain and noisy fool).

161. "God knows that two of a trade never agree."

162. "Better the severity of the master than the leniency of the father." *Cf.* 'Spare the rod and spoil the child.'

163. "Casting stones in season is better than giving money out of season." (Same as No. 156).

164. "Were there not fear of the Ruler's rod, the drunken slave would vomit in the *Ka'ba*." (None obeys except through fear. Said to schoolboys and servants). *Cf.* 'A blate[3] cat makes a proud mouse.'

165. "Yes; by combination the world can be conquered." *Cf.* 'Union is strength.'

166. "Look at your own feet." (Be careful).

167. "None says, 'My *dūgh*[4] is sour'" (*i.e.*, bad). *Cf.* 'None cries stinking fish.'

168. (*a*) "A green-leaf is a dervish's present.
What else can he give, for the poor fellow possesses only this?"

(*b*) "To carry the leg of a locust to Solomon."[5] *Cf.* 'The widow's mite.'

169. "By study the pupil overtakes the master." (Perseverance).

170. "One should commence to pray before misfortune arrives." *Cf.* 'Prevention is better than cure.'

1 The disease is supposed to be caused by this vice.

2 *Māl-i muft dil-i bī-raḥm.*

3 *Blate* "bashful, shy."

4 *Dugh* is *māst* and water mixed; it becomes *turush* after few hours.

5 The hoopoe invited Solomon and his army to dine and cast into the sea the leg of a locust saying: "He who fails to get meat from this will have broth."

150. تا نباشد چیزکی مردم نگویند چیزها

151. شد غلامي که آب جو آرد
آب جو آمد[1] و غلام به برد

152. عاقل را اشاره کافیست
or
العاقل تکفیه الاشاره

153. مهمان که خیلي جائي ماند بار میشود

154. هر که زر دارد زور دارد

155. (*a*) هر چه از باد آید برباد رود
(*b*) پول کون دادن خرج آزار بواسیر میشود

156. گریهٔ بوقت به از خندهٔ بیوقت

157. در نامیدي بسی امید است
پایان شب سیه سفید است

158. نه زنگي به گرمابه گردد سفید

159. (*a*) چراغی که بخانه رواست بمسجد حرام است
(*b*) اول خویش بعده درویش

160. طبل درون خالي آواز بسیار دارد

161. (*a*) به نزد خدای[2] جهان روشن است
که همکاره با همکاره دشمن است
or
(*b*) (= بود هم پیشه باهم پیشه دشمن)

162. جور استاد به زمهر پدر

163. سنگ زدن بمحل به که زر دادن بی محل

164. اگر چوب حاکم نباشد ز پی — گر نبودي چوب تر
کند زنگي مست در کعبه قي = فرمان نبودي گاو و خر

165. آری به اتفاق جهان میتوان گرفت

166. پیش پای خود را نگه کن

167. کس نگوید که دوغ من ترش است

168. (*a*) برگ سبزیست تحفهٔ درویش
چکند بی نوا همین دارد
or
(*b*) پای ملخ بسلیمان بردن

169. شاگرد رفته رفته به استاد میرسد

170. بلا ندیده دعا را شروع باید کرد

[1] Here read *u* poet. for *va*.

[2] There is an implication that even God can't endure a second.

171. "What comes late lasts long." *Cf.* 'Slow and sure.'

172. "Self praise is no recommendation."

173. "Don't you see that in the pasture one cow infects the whole of the village cattle?" *Cf.* 'Ae scabbed sheep will smite a hirsel.'[1]

174. "Regret for what's over is useless." *Cf.* 'No use crying over spilt milk.' *Vide* No. 207.

175. "The dead are dead, but let not the living die." *Cf.* 'Let the dead bury their dead.'

176. "Peoples are of the religion of their Rulers." (*i.e.*, people follow their leader).

177. "One bitten by a snake shies at a rope." *Cf.* 'A burnt child dreads the fire,' *and* 'A scalded cat fears cold water.'

178. (*a*) "Draw water according to the capacity of your vessel."

(*b*) Stretch out your legs according to the size of your sleeping blanket. *Cf.* 'Cut your coat according to your cloth.'

179. "A lie has no light"; *or* "A lie does not last." *Cf.* 'A lie has no legs.'

180. "Look at his face and don't ask about his circumstances." (His face is an index of his state).

181. "That pitcher is broken and that measure spilt." (*i.e.*, let bygones be bygones.) *Cf.* 'Let a dead flea stick to the wall.'

182. (*a*) "He got up from the dust and sat down in the ashes."

(*b*) "To take shelter from the rain under a water-spout." *Cf.* 'Out of the frying pan into the fire.'

183. "When the water is over one's head what matters it whether it is one fathom[2] or a hundred." (By one overwhelmed by debt or other trouble.) *Cf.* 'In for a penny, in for a pound.'

184. "By repeated asking one can find one's way to China (By perseverance.) *Cf.* 'Feather by feather the goose is plucked.'

185. (*a*) Carpentry is not the work of a monkey." (From a well-known story.)

(*b*) "It's not in the power of every weaver and cotton-carder[3]
To shoot arrows from a loosley-strung bow."

Cf. 'Let the cobbler stick to his last.'

186. "Après nous le déluge." *Vide* No. 269.

187. "Every one is King of his own house" (*i.e.*, every one is entitled to manage his own concerns). *Cf.* 'An Englishman's home is his castle.'

188. "A living dog is better than a dead lion." *Cf.* 'A laying hen is better than a standing mill.' *Vide* also Eccl. ix. 5.

189. "Speaking little is a sign of sense." *Cf.* 'Silence is golden.'

190. "'I have, I have' (Present Tense) is of use: 'I had, I had' (Past Tense) what good is that?" (Said to one boasting of the past).

[1] *Hirsel* "flock."

[2] *Kalla* a fathom is 6 feet: originally the space to which a man can extend his arms which is again equal to his height.

[3] A cotton-carder uses a '*kamān*' in his profession.

171. دیر آید دیر پاید
or
دیر آید و خوب آید

172. تعریف خود کردن گُه خوردن است

173. نمي بيني که گاوی در علف زار
بیا لاید همه گاوان ده را

174. پشیماني گذشته سودي ندارد = (مضی ما مضی or گذشته گذشته است)

175. مردها مرده اند زندها نمیرند

176. الناس علی دین ملوکهم

177. مار گزیده از ریسمان میترسد

178. (*a*) آب بقدر ظرف باید گرفت = پا باندازهٔ گلیم باید کشید

179. دروغ فروغی ندارد or دروغ عاقبت ندارد

180. رویش به بین حالش مپرس

181. آن سبو بشکست و آن پیمانه ریخت

182. (*a*) از خاک برخاست به خاکستر نشست
(*b*) از بیم باران زیر ناودان گریختن

183. آنیکه از سر گذشت چه یک کلّه [1] چه صد کلّه

184. پرسان پرسان به چین هم میتوان رفت

185. (*a*) کار بوزینه نیست نجاري
(*b*) کار هر بافنده و حلّاج نیست
از کمان سست تیر انداختن

186. پس از ما گو جهان را آب گیرد

187. هر کس پادشاه خانهٔ خود است

188. سگ زنده به از شیر مرده

189. کم گفتن دلیل هوشمندیست

190. دارم دارم بدرد میخورد داشتم داشتم چه فایده دارد

[1] *Kalla*, "the height of a man's stature."

191. "A thief knows a thief and a saint a saint." *Cf.* 'Set a thief to catch a thief.' *Vide* No. 3.

192. "When thief meets thief he slips his club into his *kamar-band*." *Vide* No. 71.

193. "A knowledge of a thing is better than ignorance thereof." (*i.e.*, acquire all the experience you can).

194. "The crow thinks its young more beautiful than the young of any other bird." *Cf.* 'He thinks his geese swans.' *Cf.* 'Every one thinks his own country Kashmir' (Afghan).

195. "By gentle speech and courtesy you can draw a mountain to you by a single thread."

196. "One flower does not make a spring." *Cf.* 'One swallow does not make a summer.'

197. "God is slow to punish, but He punishes severely." *Cf.* 'The mills of God grind slowly, but grind exceeding small,' *and* 'God comes wi' leaden feet, but strikes wi' iron hands.'

198. (*a*) "An account is an account and a *frater* a brother." (*i.e.*, business is business and friendship is friendship: you must keep the two apart.)

(*b*) "Brothership has its own place, but the goat can't be sold for less than seven hundred dinars."[1] (*Vide* above.)

199. "God takes the ship where he lists, let the Captain rend his clothes as he will." *Cf.* 'No striving against Fate.'

200. "Bake while the oven's hot." *Cf.* 'Make hay while the sun shines.'

201. "You'll never get fruit from the willow tree." (*i.e.*, you'll never get money from a miser).

202. "It's something to get even a shoe from a dead donkey." (Might be applied to the dividend paid by a bankrupt).

203. "The lamp casts no lustre on its own stand." (*i.e.*, he benefits others, not his own people.)

204. "He raises his foot to be shod." (*i.e.*, 'he's an ass': Said to one who is always thrusting in his oar).

205. (*a*) "The colander[2] says to the skimmer,[2] 'You're full of holes.'

(*b*) "The pot calls the kettle black." *Cf.* 'Crookit carlin' quo' the cripple to his wife.'

206. (*a*) "A house that has two mistresses is unswept."

(*b*) "If there are two midwives the infant's head is squashed." *Cf.* 'Too many cooks spoil the broth.'

207. "Whether you weep or whether you wail, the thief won't give back your property." *Cf.* 'No use crying over spilt milk.' *Vide* No. 192.

208. "If he spoke late he spoke to the point."

[1] In present value about seven pence, 100 *dīnār* being about equal at 1*d*.

[2] Both these have holes.

191. دزد دزد را مي شناسد و ولي ولي

192. دزد که بدزد میرسد چماقش بیخ کمرش میکند

193. علم هر کار بهتر از جهلش است

194. کلاغ بچهٔ خود را از همه خوشگلتر مي پندارد

195. بشیرین زباني و لطف و خوشي
توانی که کوهي به موئي کشي

196. از یک گُل بهار نمي شود

197. خدا دیر گیر است و هم سخت گیر

198. (*a*) حساب حساب است کا کا [1] برادر
(*b*) برادري جای خود است اما بز از هفصد دینار کمتر نیست

199. خدا کشتي آنجا که خواهد برد
اگر ناخدا جامه بر تن درد

200. تا تنور گرم است نانی به پز

201. هر گز از شاخ بید بر نخوري

202. از خر مرده نعل هم غنیمت است

203. چراغ پای خود را روشن نمیکند

204. پا بلند مي کند که نعلش کنند

205. (*a*) چلو صاف کن بکف گیر میگوید تو سوراخ داري
(*b*) دیگ بدیگ میگوید که رویت سیاه است

206. (*a*) خانهٔ که دو کدبانوست خاک تا زانوست
or
(*b*) ماماچه که دو تاشد سر بچه کج میشود

207. گر کني داد ور کني فریاد
مال را دزد پس نخواهد داد

208. اگر دیر گفت گل گفت

1 *Kākā*, an elder brother ; a familiar term for a slave of any age.

209. "We're lame and the stage is long." (=That's difficult to obtain as I have inadequate opportunities.)

210. "Stone breaks stone. *Cf.* 'Diamond cuts diamond.'

211. "Either death drives a man to a place or the need of livelihood." (There is a belief that the place of a man's grave is fixed and "its earth draws him.")

212. "He puts his cheese in a bottle and rubs the bread on the outside." (Said of a niggard.) *Cf.* 'Potatoes and point.'

213. "Till the water is made muddy you can't catch fish." *Cf.* 'You can't make omelettes without breaking eggs.'

214. "In war *ḥalvā* [1] is not meted out." *Cf.* 'One doesn't make war with rose-water.'

215. "In the ant's house, dew is a deluge." (*i.e.*, a small loss is great loss to a poor man.)

216. "A hair from a bear." '(If you get a hair from a bear it's enough'); *i.e.*, you are lucky to get as much from a miser. *Cf.* 'Sue a beggar and gain a louse.'

217. "A sweet voice will draw a snake from its hole"; *i.e.*, You can, by soft words, get good even from an enemy). *Cf.* 'A soft answer turneth away wrath.'

218. "The sea does not always remain the same.' (Fickle Fortune.)

219. "His fist was opened"; (*i.e.*, his secret was disclosed).

220. "Patience is the key of success"; (*i.e.*, by patience you overcome difficulties). *Cf.* 'All things come to him that waits.'

221. "You can't take a Turkish bath without sweating." (Of various application. Can be said to one who asks if there is anything to pay.)

222. (*a*) "At night cotton-seeds look like pearls."

(*b*) "At night cats look like enemies." *Cf.* 'All cats are grey in the dark,' *and* 'She might easily pass for 45 in the dusk with the light behind her.'

223. "Words beget words and wind brings snow." (Used of a quarrel.) *Cf.* 'Ae lawsuit breeds twenty.'

224. "His life is like the sun when it has declined to the edge of the roof." *Cf.* 'He has one foot in the grave.'

225. "The Tyrant complains of the man over whom he tyrannizes."

226. "God's chosen have ceased to exist and asses swarm in the kingdom."

227. "Speak low for walls have ears."

228. "'Tis a waste of time to paint the brows of the blind."

229. "Drink wine, burn pulpits, set fire to your sacred vestments,
Dwell in idol temples, but don't oppress people."

(*i.e.*, all vices are small compared to injuring one's fellow-beings.)

230. "This house is all sunshine." (Always ironical.)

231. "Bad *bādinjāns* always remain uninjured." *Cf.* 'It is always the wicked that flourish.'

[1] The common *ḥalvā* is made of flower, sugar and butter. The Arabian *ḥalwā* is mixed with camel's milk.

209. پای ما لنگ است و منزل بس دراز

210. سنگ را سنگ میشکند

211. یا اجل میدواند یا روزي

212. او پنیر توی شیشه میکند و نان پشتش مي‌مالد

213. تا آب گل‌آلود نشود ماهي نتوان گرفت

214. در دعوی حلوا قسمت نمیکنند

215. در خانهٔ مور شبنمي طوفان است

216. از خرس موئی[1]

217. زبان خوش مار را از سوراخ بیرون مي آرد

218. دریا همیشه یک قسم نمي ماند

219. مشتش واز شد

220. الصبر مفتاح الفرج or مَنْ صَبَرَ ظَفَرَ

221. حمام بی عرق نمیشود

222. (*a*) شب پنبه دانه در مي نماید
(*b*) شب گربه سمور مي نماید

223. حرف حرف مي آرد باد برف

224. عمر او آفتابِ لبِ بام است

225. ظالم ار مظلوم باشد شکوی چیست

226. خلق خدا گم شدند ملک خدا خر گرفت

227. آهسته بگو دیوار هم گوش دارد

228. زحمت بیفایده است وسمه بر ابروی کور

229. مي بخورامنبر بسوز آن آتش اندر خرقه کن
ساکن بتخانـــه باش و مردم آزاري نکن

230. این خانه تمام آفتاب است

231. بادنجانِ بد آفت ندارد

[1] *Kanda mī-shavad bas ast* is understood.

232. "The babe is not suckled till it cries;" (*i.e.*, you won't get anything till you ask for it).

233. "Make him see death that he may become content with fever." *Cf.* Throw him into the sea and he'll not afterwards mind sea-sickness.

234. "He restrains himself after he has broken wind." *Cf.* 'Shut the stable door after the horse is stolen.'

235. (Expresses insipidity.)

236. "One hand can't clap." *Cf.* 'It takes two to make a quarrel.'

237. "The only people who don't know are Adam and Eve," *or* "The only people who don't know are Sa'dī and Hāfiẓ." *Cf.* 'The whole world knows that Queen Anne's dead.'

238. "Water won't ooze through his closed fist." (Of a miser: close-fisted.)

239. "He brightens his house." (Said of a temporary revival before death.)

240. (*a*) "He doesn't know the difference between an ox and an ass."
(*b*) "He doesn't know *hir* from *pir*."
Cf. 'He kens nae a mavis frae a madge-howlet.'[1]
'He kens nae a selgh[2] frae a salmon.'
'He doesn't know a hawk from a hernshawe.'
'He doesna ken a B from a bull's foot.'

241. "'There's a small bowl under the big one." (There's something behind this.)

242. "Absence and friendship." *Cf.* 'Distance lends enchantment,' *and* 'His absence is good company.'

243. "His voice is pleasing to his head"; (*i.e.*, he's fond of the sound of his own voice).

244. "Even a dog is a lion in its own home." *Cf.* 'Every cock crows crousiest[3] on his ain midden head.'

245. "The spilt *ghī* is an offering to Imām Ja'far-i Ṣādiq."[4] (A man spilt his *ghī* and at once exclaimed, "This was my votive offering to Imām Ja'far.")

246. "If the scald-headed were a doctor, he would treat his own head.' *Cf.* 'Physician heal thyself.'

247. (*a*) "The day of hope is exceeding long."
(*b*) "Expectation is worse than death."
(*Cf.* 'A day to come seems longer than a year that's gone.'

248. "Ḥasan from Baṣra, Bilāl from Abyssinia, Ṣuhaib from Syria.
And Abū Jahl from Mecca—this is strange indeed."

Cf. 'A black hen may lay a white egg,' *and* 'An ill cow may hae a gude calf.'

249. "One should never consider any enemy contemptible." *Cf.* 'A sma' leak will sink a great ship.'

1 Owl. 2 *Selgh* "seal." 3 Liveliest. 4 One of the twelve Imams.

232. تا نگرید طفل کی نوشد لبن

233. بمرگش بگیر تا بتب راضي شود

234. وقتیکه گوزید خود را جمع میکند

235. مثل ماچ بعد از جماع

236. دست یکه صدا نمیکند

237. (*a*) کسیکه نمیداند آدم و حوّاست

(*b*) کسی که نمي داند شیخ سعدي و خواجه حافظ است

238. آب از سوراخهای مشتش نمیچکد

239. خانه روشن میکند

240. (*a*) خر و گاو از هم فرق نمیکند

(*b*) هِر از پِر نمي داند [1]

241. زیر کاسه نیم کاسه ایست

242. دوري و دوستي

243. صدایش بسرش خوش مي آید

244. سگ هم در خانه خود شیر است

245. روغن ریخته نذر امام جعفر صادق

246. کچل ار طبیب بودي سر خود دوا بکردي

247. (*a*) روز امید بس دراز بود

(*b*) الانتظار اشد من الموت

248. حسن ز بصره بلال از حبش صهیب از شام
ز خاک مکه ابو جهل اینچه بوالعجبیست

249. دشمن نتوان حقیر و بیچاره شمرد

[1] *Hir* and *pir* are meaningless words.

250. "We're all sons of Adam." (Said to one groundlessly claiming kin with a big person.) *Cf.* 'As sib as siene and riddle that grew in ae wood.'

251. "A bearded man with no hair on his chin." (*i.e.*, things that are incompatible.)

252. "Your to-morrow is ten years." *Cf.* Belyve [1] is twa hours and a half.

253. "Cheatery game will aye kythe."[2]

254. "A wound by the tongue is worse than one by the spear." *Cf.* 'Evil words cut mair than swords.'

255. "Bravery lies in hand-to-hand fighting; not in guns and rifles." (The Persians think any old woman can point and fire a big gun, but that it takes a man to use a sword.)

256. "To sell the skin of an untrapped deer." *Cf.* 'Don't sell the bear-skin before you have caught the bear.'— *Italian.* *Cf.* 'Don't count your chickens before they are hatched,' *and* 'Dinna gut your fish till ye get them.'

257. "Empty-handed you must depart this world." *Cf.* 'A' that ye 'll take wi' ye will be but a kist [3] and sheet after a.' [4]

258. "Stop the source of the spring with a bodkin." *Cf.* 'A stitch in time saves nine,' *and* 'For want of a steek a shoe may be tint.' [5]

"For want of a nail the shoe was lost;
"For want of a shoe the horse was lost;
"For want of a horse the man was lost."—*Nursery lines.*

259. (*a*) "What does an ass know of the worth of saffron?"

(*b*) "What does an ass know of the value of loaf sugar and sugar-candy?"

Cf. 'To cast pearls before swine.'

260. "All that shines is not gold." *Cf.* 'A's no gawd that glitters, nor maidens that wear their hair.'[6]

261. "Picking up a large stone is a sign that it won't be thrown." *Cf.* 'Great barkers are nae biters.'

262. "Where the broth is, there the wretched scald-head is ready to serve." *Cf.* 'Flies are always where the sweets are.'

263. "He's from good seed." *Cf.* 'He's a hawk o' a right nest.'

264. "He's from bastard stock." (Opposite to above.)

265. "Promising is easy; fulfilling is difficult." *Cf.* 'He's poor that canna promise

266. "Cut off one hand of his that lends a book; cut off both of his that returns it."

267. "He who gives teeth, gives bread." *Cf.* 'God ne'er sent the mouth but he sent the meat wi't.'

268. "The broader his roof the more snow it collects," (*i.e.*, the greater the man the greater the responsibility).

[1] *Belyve*, "immediately" or "in a little."
[2] *Kythe* "to appear."
[3] *Kist*, "chest."
[4] In allusion to the death of a purse-proud man.
[5] *Steek*, "stick": *tint*, "lost."
[6] About 1721 it was the fashion for virgins to go bareheaded—*Kelly.*

250. همهٔ ما اولاد آدم هستیم

251. کوسه [1] و ریش پهن

252. فردای شما ده سال است

253. [2] دزدی آخر ندارد

254. زخم زبان بد تر از زخم سنان است

255. مردانگي با شمشیر است نه با توپ و تفنگ

256. آهوی نا گرفته پوست فروختن

257. دست خالي از دنیا باید رفت

258. سر چشمه باید گرفتن به میل

259. (*a*) خرچه داند قدر زعفران

or

(*b*) خرچه داند بهای قند و نبات

260. هر درخشندهٔ طلا نبود

261. سنگ بزرگ علامت نه زدن است

262. جائیکه آشن است کچلک [3] فراش است

263. او از تخم خوب است

264. او تخمش حرام است

265. وعده کردن آسان است ایفایش مشکل

266. کسیکه کتاب بعاریت بدهد یک دستش را باید برید و کسیکه پس دهد دو دستش را

267. همانکس که دندان دهد نان دهد

268. هرکه بامش بیش برفش بیشتر

[1] *Kūsa P*, *kūsaj* Ar. one who has a thin beard or no beard.

[2] *Duzdī* is also used for cheating at games.

[3] *Kachalak*, dimin. for contempt. Scald-headed people are supposed to be very cunning.

269. "After our death what matters it whether the world is water or a mirage?" *Cf.* 'He caresna wha's bairns greet if his ain laugh.' *Vide* No. 186.

270. (*a*) "Either my head or his cap."

(*b*) "I'll either be a plank of the throne or a plank of the coffin."

(*c*) "A throne on a bier."

Cf. 'A man or a mouse,' *and* 'He'll either win the horse or tine the saddle.'

271. "O God, never let a beggar become great!" *Cf.* 'He'll gang mad on a horse wha's proud on a pownie,' *and* 'A beggar on horseback.'

272. "Never marry a widow though she be a houri." *Cf.* 'He that marries a widow will hae a dead man's head often thrown in his dish.'

273. "Spitting on one's own head." *Cf.* 'Washing one's dirty linen in public,' *and* 'He that spits against the wind spits in his own face.'

274. "All tall men are fools except '*Umar*: all short are mischievous except 'Alī."

Cf. 'High trees show mair leaves than fruit'; (a disparaging allusion to tall people).

275. "His belly is reciting the '*Qul hū Allah.*'[1]" *Cf.* 'His wame thinks his wizen's cut: (expressive of intense hunger).

276. "Chuck away these puffings; if you're a man come on."

277. "'If' was married to 'But' and the offspring of the union was named 'Oh, would that!'" *Cf.* "'If' an' 'Or' spoil mony a gude charter."

278. "If I'm not an active friend, I'm yet not a burden." *Cf.* 'If I'm no kind I'm no cumbersome.'

279. "Marriages are made in Heaven."

280. "Like a statue I was frozen to the spot," (*i.e.*, struck dumb with amazement).

281. "Like a picture on a wall." (Expresses astonishment.)

282. "I know him vein and sinew." *Cf.* 'I ken him as weel as if I had gane through him wi' a lighted candle.'

283. "Each his own work and each his own load." *Cf.* 'Ilka bird maun hatch her ain egg.'

284. "Every village has its head man;
Every land has its law."

Cf. 'Ilka land has its ain leid' (language).

285. "As clear and evident as the sun." *Cf.* 'As plain as a pikestaff.'

286. "The elephant recollected its India," (*i.e.*, I remembered my mother country).

287. "I wish his nose string was in my hand!" *Cf.* 'I wish I had a string in his lug.'

288. "Lay a thing by and it will come of use even though it be only snake venom" (*or* "the penis of an ass").

289. "It's not the cowl that makes the monk."

290 "You can bend the green stick as you will, when dry it will straighten only by fire." *Cf.* 'It's no easy to straucht in the oak the crook that grew in the sapling.'

[1] This *Sūra* is recited on occasions of distress.

269. دنیا پس مرگ ما چه دریا چه سراب

270. (*a*) یا سر یا کلاه
(*b*) یا تختهٔ تخت یا تخته تابوت
(*c*) یا تخت یا تابوت

271. یا رب مباد آنکه گدا معتبر شود

272. زن بیوه نکن اگر چه حور است

273. تف بالای سر

274. کل طویل احمق الا عمر
کل قصیر فتنة إلا علي

275. شکمش قل هو الله میخواند[1]

276. این پفهایت را دور بیانداز اگر مردی خودت بیا میدان

277. اگر را با مگر تزویج کردند
ازو یک بچهٔ شد کاشکي نام

278. اگر یار شاطر نیستم بار خاطر هم نیستم

279. عقد را بر عرش خوانده اند

280. مثل مجسّمه برجا خشک شدم

281. مثل نقش بر دیوار

282. من رگ و ریشهٔ او را میدانم

283. هر کسی کار خودش بار خودش

284. هر دهی کدخدائي و هر ملکی قانونی دارد

285. مثل آفتاب روشن است

286. هندوستان بیاد فیل افتاد
or
فیل بیاد هندوستان افتاد

287. کاشکي مهارش دست من بود

288. داشته آید بکار گرچه بود زهر مار (or کیر خر)

289. درویشي به طیلسان و خرقه نیست

290. چوب تر را چنانکه خواهي پیچ
نشود خشک جز به آتش راست

[1] The whole *sūrah* is :— قُلْ هُوَ اللّٰهُ اَحَدٌ اللّٰهُ الصَّمَدُ لَمْ يَلِدْ وَلَمْ يُوْلَدْ وَلَمْ يَكُنْ لَّهُ كُفُوًا اَحَدٌ

291. "Everyone has a five-days' opportunity." *Cf.* 'Every dog has its day.'

292. "A gold crown is no ornament for a beggar." *Cf.* 'It doesna set a sow to wear a saddle.'

293. "Keep your gab steekit (shut) when ye ken na your company."

294. "Heaven without companionship would be pleasureless," *or* "Even Heaven requires company."

295. "Too much praise spoils the child."

296. "There's no economy in the Fast." *Cf.* 'Long fasting hains (economizes) nae meat.'

297. "To dig up a mountain and unearth a mouse." *Cf.* 'Much ado about nothing.'

298. "Like a camel on a ladder." (Expressive of extreme awkwardness.) *Cf.* 'Like a sow playing a Jew's harp.'

299. "He neither eats it nor gives it to others;
"He'll let it go rotten and then give it to a dog."
(*i.e.*, 'a dog in the manger').

300. "Love and jealousy are sindle sindry" (separate).

301. "Money solves all difficulties." *Cf.* 'No friend like the penny.'

302. "Who knows whether the *parda* conceals beauty or ugliness?" *Cf.* 'None can tell what's i' the shaup (husk) till it's shelt.'

303. "What is in the heart comes on to the tongue." *Cf.* 'Nearest the heart nearest the mouth.'

304. "The greater the rank the greater the danger." *Cf.* 'Nearest the king nearest the widdy' (rope or gallows).

305. "Why use poison when you can kill by honey?" *Cf.* 'Ne'er draw your dirk when a dunt (blow) will do.'

306. "Worthless; neither ass nor man." *Cf.* 'Ne'er gude egg nor bird.'

307. "Don't give cash for credit." *Cf.* 'Ne'er quit certainty for hope.'

308. "Not the best and not the worst." *Cf.* 'Neither so sinful as to sink nor so holy as to swim.'

309. "I'll call you *Ḥājī* and you call me *Ḥājī*," (*i.e.*, log rolling). *Cf.* 'Lie for him and he'll swear for you.'

310. Said to one that borrows articles, especially a horse, hawk or gun. *Cf.* 'Let ilka tub stand on its ain bottom.'

311. "Every word has its own place and every point its proper application." *Cf.* 'Let the kirk stand in the kirkyard.'

312. "He who hath money hath fear, and he who hath none hath sorrow." *Cf.* 'Money makes and money mars.'

313. "Bright it shone but its fortune was short-lived." (Of a meteor-like career.) *Cf.* 'Up like a rocket and down like its stick.'

314. (*a*) "Too much politeness and too little *bakhshīsh*.
(*b*) "He has too much dry courtesy."
Cf. "He puts his hand quickly to his hat and slowly to his purse.

291. هر کسی پنج روزه نوبت اوست

292. تاج زر زینت گدا نبود

298. در مجلس اغیار لبت بسته بدار

294. بهشت بی رفیق لطفی ندارد - یا بهشت هم رفیق میخواهد

295. تعریف زیاد بچه را خراب میکند

296. روزه گرفتن صرفه ندارد

297. کوه کندن و موش در اوردن

298. مثل شتر بر نردبان

299. نه خود خورد نه کس دهد گنده کند به سگ دهد

300. عشق و رشک جدا نمیشود

301. پول حلّال مشکلات است

or

پول قاضي الحاجات است

302. در پس پرده چه دانند که خوب است و که زشت

303. هرچه در دل است به زبان مي آید

304. هر که قدرش بیش دردش بیشتر

305. کسیرا که از شهد میتوان کشت زهر دادن چه سود

306. او هیچ کاره است، نه خر است نه آدم

307. نقدرا بنسیه نباید داد

308. نه خوبِ خوب است نه بدِ بد

309. من ترا حاجي بگویم تو مرا حاجي بگو

310. جماع بکیر دیگران لذت ندارد

311. هر سخن جائي و هر نکته مکانی دارد

312. کسیکه زر دارد ترس دارد و کسیکه زر ندارد الم دارد

313. خوش درخشید ولی دولت مستعجل بود

314. (*a*) در تواضع بیش و در بخشش درویش

(*b*) تواضعها خشک زیاد [1] دارد

[1] An Ispahani taunt levelled against the Shirazis.

315. "Wherever a spring of good water is found there gather men and animals." *Cf.* 'Rich folks hae routh (plenty) o' friends.'

316. "The end of the *Shāh-Nāma* is good" (=Let us see whether he'll continue in this good path). '*Cf.* Ruse (praise) the fair day at e'en,' *and* 'Praise the ford when you're over it.'

317. "Lying requires no stock-in-trade." *Cf.* 'Words pay no toll.

318. "Send you to the sea and ye'll no get saut water."

319. "Lookers on see more than the players."

320. "A thousand blessings are equal to one health." *Cf.* 'Health is wealth.'

321. "He who has knowledge has power."

322. "A rolling stone gathers no moss."

323. (*a*) "Donkeys don't — dates everyday.[1]"

(*b*) "Everyday is not '*Id* that one should get *ḥalvā*[1] to eat."

(One can't expect nice things everyday).

324. "You can't have both God and dates."[2] *Cf.* 'You can't have your cake and eat it.'

325. "Bad goods will stick to the seller's beard." *Cf.* 'Bad goods find no purchasers.'

326. (*a*) "A blow with the fist after being gelt."[3]

(*b*) "Hump upon hump," (*i.e.*, misfortune upon misfortune).

Cf. 'Piling Pelion upon Ossa.'

327. "You were joking with me; do you now joke with my grandfather?" (*i.e.*, You were joking about trifles, do you now joke with great matters? The moral of the fable of the boy who cried "Wolf! Wolf!")

328. (*a*) "None scratches my back but my own finger nail."[4]

(It's one's own relations that injure one). *Cf.* 'Save me from my friends.'

(*b*) "We are our own misfortunes."

329. "His *kulāh* has no wool" (*i.e.*, it is threadbare). (He is no longer of any account.)

330. "How easy to be a Preacher, how difficult to have sense."

331. "His hand is not tied to anything special," (*i.e.*, he is out of work).

332. "His wallet is empty. (Same as No 329).

333. "Driven from the monastery and exlcuded from the *ḥaram* of Mecca."[5] (Neither one thing nor the other.)

334. "If you want to die (*i.e.*, if you want worse) go to *Gīlān*."[6] (Might be said to a man demanding more than his fare.)

335. "All the water fell from the mill-wheel," (*i.e.*, all was still.)

336. "What good can come from that household in which hens crow like cocks?" *Cf.* 'It is a sad house where the hen crows louder than the cock.'

1 Sweets are in every house on '*Id*.

2 An allusion to the *Khar-i-Dajjāl* that will appear with its rider before the Day of Resurrection and *Bi-jā-yi sargīn khurmā mī-andāzad*. Men will follow the Antichrist for the sake of the dates and so be led into Hell.

3 After a goat is gelt it is struck on the quarters to make it rise.

4 In Arabic the same proverb signifies 'None helps me like myself.'

5 *Dhobī kā kuttā na ghar kā na ghāṭ kā.* 6 Gīlān is damp and unhealthy.

315. هر کجا چشمهٔ بود شیرین
مردم و مار و مور گرد آیند

316. شاه نامه آخرش خوش است

317. دروغ مایه نمیخواهد

318. اگر بدریا ترا بفرستند آبهم گیر نخواهي آورد

319. تماشا کن بهتر از بازی کن مي بیند

320. هزار نعمت و یک تندرستي

321. توانا بُود هر که دانا بُود

322. که برسنگ غلطان نه روید نبات

323. (*a*) هر روز خر خُرما نمي ریند
(*b*) هر روز عید نیست که حلوا خورد کسی

324. هم خدا و هم خرما نمي شود

325. مال بد بیخ ریش صاحبش

326. (*a*) مُشتِ پس خایه
(*b*) قوز بالای قوز

327. شوخي شوخي باریش بابام شوخي ؟

328. (*a*) کس نخارد پشتِ من جز ناخنِ انگشتِ من [1]
(*b*) از ماست که برماست

329. کلاهش پشم ندارد

330. ملا شدن چه آسان آدم شدن چه مشکل

331. دستش بجائی بند نیست

332. چنته [2] اش خالي است

333. از دیر رانده و از حرم مانده

334. مرگ میخواهي برو جیلان

335. آب از آسیا افتاد

336. چه خیري بیاید از آن خاندان * که بانگ خروس آید از مایان ؟

[1] مَا حَكَّ جِلْدَكَ مِثْلُ ظُفْرِكَ

[2] *Chinta*, a dervish's bag with partitions and worn suspended direct from a shoulder (not across the body, English fashion). In India this bag is called *baṭūā*.

337. "These are Shiraz compliments." *Cf.* 'Sott words butter no parsnips.' *Vide* 314.

338. "He who has no money eats merd." (*i.e.*, he has a bad time.) *Vide* No. 106.

339. "May no Muslim hear it; may no infidel see it!" (=Alas! how fatally!)

340. (*a*) "I sought you in the sky; I found you in the earth."

(*b*) "My love is in the house and I'm seeking her through the world. There is water in the pitcher but I wander athirst."

(Said on unexpectedly coming across a friend that has been sought for far and near.)

341. "Thoughts are mere air."

342. "Bring the ass and load up the dispute" (*or* "the beans"). *Cf.* 'The fat's in the fire.'

343. "Yellow dog brother to black jackal," (*i.e.*, one is as bad as the other). *Vide* No. 349.

344. "I'll bet you a hair of my beard that he won't," (*i.e.*, I'll bet you a farthing he won't).

345. "I'm a *bhoy* from the Pure Country," (*i.e.*, 'I'm from Shiraz:' a *lūṭī* phrase).

346. "Your henna has no colour," (*i.e.*, 'your words have no value).

347. "If you can't get hold of the lady, put up with her kitchen maid."

348. "I can't satisfy two wives." *Cf.* 'I can't serve both mistress and maid.'

349. "The bay is no worse than the iron-grey." (The wife is as bad as the husband. The one is as bad as the other).

350. "The *kulāh* of Taqi on the head of Naqi." *Cf.* 'Robbing Peter to pay Paul.'

351. "Little Aḥmad goes not to school, but he's made to go," (*i.e.*, 'If you don't do it willingly, you'll be made to do it').

352. "First rinse your mouth with rose-water and then mention his name," (*i.e.*, he's a very great person, one not to be mentioned except with veneration. Also said to a pretender claiming equality with a great writer).

353. (*a*) "None sees his own faults."

(*b*) "Everyone sees the faults of others."

Cf. A camel does not see its own hump.

354. "Every bird that has a crooked beak is not a gos-hawk."

Cf. All are not hunters that blow the horn.

355. (*a*) "When the bamboo blossoms."

(*b*) "The year that has no Friday," (*i.e.*, never). *Cf.* 'When two Sundays meet together,' *or* 'When Good Friday falls on a Thursday.'

356. *Īʿd-i-Fiṭr* can never fall on the day of '*Ashūrāʾ*.'"[1]

357. "The cloth merchant is ever naked, and the shoemaker barefoot."

Cf. Nobody is worse shod than the shoemaker's wife.

358. "His head is like the bottom of a bowl." (*i.e.*, bald). *Cf.* 'As bald as an egg.'

[1] *Īd-i-Fiṭr* terminates the Fast, and '*Āshūrāʾ* is the 10th of Muḥarram, the day of Ḥusain's death and the day that the *shabīh* (in India *taʿziya*) is brought out.

337. این تعارفهای شیرازي است

338. کسی که پول ندارد ککه میخورد

339. مسلمان نشنود کافر نبیند

340. (*a*) ترا در آسمان میجستم در زمین یافتم

(*b*) یار در خانه و من گرد جهان مي گردم
آب در کوزه و من تشنه لبان می گردم

341. خیال جزو هوا است

342. خر بیار و معرکه (or با قلي) بارکن

343. سگ زرد برادر شغال سیاه

344. یک شاخه از ریشم بگرو اگر بکند

345. من بچهٔ خاک پاکم

346. حذات رنگ ندارد

347. دستت چو نمي رسد به بي بي * دریاب کنیز مطبخي را

348. من جواب دو زن را نمي توانم بدهم

349. کهر از کبود کم نیست

350. کلاه تقي بر سر نقي

351. احمد به مکتب نمیرود ولي مي روندش

352. اول برو دهنت را از گلاب بشور، آنوقت اسمش را به بر

353. (*a*) عیب خود را کسی نمي بیند
(*b*) هر کسی عیب دیگری بیند

354. هر مرغی که منقارش کج است باز نیست

355. وقت گل نی
سالیکه جمعه ندارد

356. عید فطر هرگز عاشورا نمیشود

357. بزاز همیشه برهنه و کفش دوز همیشه پا برهنه

358. سرش مثل کون طاس است

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THE COMMON HYDRA OF BENGAL

BY

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The Common Hydra of Bengal: its Systematic Position and Life History.

By N. ANNANDALE, B.A. (Oxon), D.Sc. (Edin.), C.M.Z.S., *Officiating Superintendent of the Indian Museum and Professor of Zoology in the Bengal Medical College.*

[Read June 6th, 1906.]

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In 1905 I called attention to the existence of a species of Hydra in Bengal, which I named provisonally *Hydra orientalis*,[1] and more recently[2] I have published additional specific characters of this species, but only in a condensed form. As I propose in the present communication to deal with the peculiarities in the structure and life history of the Bengal form, it has been unnecessary to describe in detail structures and phenomena well known and undisputed in other species of the genus.

I.

STRUCTURE.

Hydra orientalis is an ordinary member of its genus as regards structure. It has a slender cylindrical body, which is not less than thirty times as long as broad when normally extended and has a slightly smaller diameter at the base than towards the mouth. (When food has been swallowed recently these characters are not apparent.) In the adult the number of tentacles is either five or (more commonly) six ; while the young polyp has five, four, or only three. The tentacles are capable of great extension, sometimes being six times as long as the body, and more commonly three times as long ; they are not dilated at the tip. *H. orientalis* is dicœcious. The male produces some four to twenty-four spermaries. Two kinds of eggs are borne by the female, often on the same individual and almost simultaneously. One kind, which is probably pathological, has a thin, smooth surface with a small projection at the pole furthest from the point of attachment to the parent, while the other has a thick outer shell set with slender spines

[1] *Journ. Asiat. Soc. Bengal*, 1905, p. 72.

[2] *Ibid.*, 1906, p. 109.

which are laterally expanded or bifid distally. The gonads are confined to the upper part of the body in both sexes. Budding takes place very sparingly, in a definite zone nearer to the aboral pole than to the mouth. The colour is never that of chlorophyl.

The above description will serve as a diagnosis of the form. It is based on the examination of a large number of individuals taken during the years 1904-5 and 1905-6 in Calcutta. The several structures of *Hydra orientalis* may now be discussed in greater detail.

Body—

Especially below the budding zone, the walls of the body are thin. The alimentary canal is of considerable relative diameter, terminates bluntly below, and may be slightly expanded at the base. Although it is not constricted at any point, undigested food does not pass freely down it but remains in the upper half, giving temporarily to the body the shape of a wine-glass.

The external surface is not smooth but bears a delicate, raised reticulation, which is more conspicuous below the budding zone than above it. The cnidocils of the nematocysts are sufficiently long and numerous to give the upper part of the body a somewhat hirsute appearance under a low power of the microscope.

Both ectoderm and endoderm cells are normal in character.

Tentacles—

Except when completely retracted, the tentacles are very slender. When fully elongated they have the appearance of a number of minute beads strung loosely on an almost invisible thread ; but I have not seen them elongated to such an extent as to become quite invisible to the naked eye at any point. The terminal bead is longer, but has not a greater transverse diameter than the others. The beads are batteries of stinging cells set in ordinary ectoderm and supplied with nerve cells. These batteries do not form uninterrupted bands round the tentacle, but each of them consists of several transversely elongated tracts closely pressed together. Each tract surrounds the tentacle incompletely and overlaps the one next to it at one end or at both.

I have not seen an individual which was budding and yet had fewer than five tentacles, or more than six ; the great majority of those examined have had six. Buds, on the other hand, usually have five. On one occasion an individual which had only four tentacles commenced (probably in abnormal circumstances) to develop male organs ; two individuals while under observation appeared to bear as many as ten tentacles each, until a microscopical investigation revealed the fact that reproduction by vertical splitting had commenced, and that the crown of tentacles was really double.

Nematocysts—

These structures are probably smaller in *H. orientalis* than they are in some species ; I do not think that the size of the large cells is constant, but that it varies considerably in different individuals. The thread is extremely long in all cases. The largest type of stinging thread has a long neck set with a large number of very short, stout

spines in front of the barbs, and closely resembles that found in *H. grisea*.[1] A form without these spines and smaller than the other occurs occasionally, being intermediate between the largest and most complex and the simplest type, which is, as is the case in other species, devoid of barbs.

The smallest nematocysts are very much more numerous than the largest ones, and as a rule each large cell is surrounded by small ones. Their arrangement is not, however, by any means regular. Both these forms are more abundant on the upper half of the body than on the lower. Their distribution has no definite relation to the raised reticulation on the surface of the body. On the tentacles there are about four large cells in each tract, but the number is not constant. In the terminal bead there is a battery of the largest cells.

The gonads will be described under the heading "Reproduction."

Dimensions—

When fully expanded the body may be nearly 3 cm. long, but 1·5 cm. is a more usual length. When the body is very much elongated, the tentacles are never fully extended.

The Species of Hydra.

The attempts that have been made to ascertain the number of species and the best diagnostic characters in the genus Hydra have been numerous. There can be no doubt that the earlier authors of the eighteenth and nineteenth centuries described a number of temporary phases as distinct forms. Such was the case, for instance, with Pallas's *H. oligactis*, the most important character of which, *viz.*, the wine-glass shape of the body, depended on its having recently fed. (See the figures given by Hincks, *Brit. Hydr. Zooph.* I, p. 315, 1868.) In a similar manner colour was made a criterion, although in some forms the colour of the individual changes from time to time. Even in recent years different authors have regarded different characters as of specific importance. In 1882 Haacke[2] recognized three species; Nussbaum[3] recognized four in 1887, as did Brauer[4] in 1891; but Brauer's four were not the same as Nussbaum's. Hargitt,[5] in 1901 only recognized two, but did not give diagnoses. Downing,[6] in 1905, agreed with Brauer, naming a form, *H. diœcia*, which the latter had recognized but not named. Brauer and Downing's classification, being founded on a combination of several characters, appears to be sound, provided that no attempt is made to identify individuals without a study of their life-history. It must be frankly confessed that in many instances the only distinctive characters which could be noticed with certainty, if even they were recognizable, would be those on which Hargitt probably relied. This, however, is only true in the case of individuals which are not sexually mature, and of males.

Leaving out of consideration such doubtful forms as Asper's[7] *H. rhætica* from

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1 See Nussbaum in *Archiv. f. micr. Anat.*, XXIX, 1887, pl. XIII, fig. 10.

2 *Jena. Zeitschr. f. Med. u. Naturw*, XIV, 1880, p. 134.

3 *Archiv. f. micr. Anat.*, XXIX, 1887, p. 272

4 *Zeitschr. f. wiss. Zool.*, LII, 1891, p. 177.

5 *Amer. Naturalist*, XXXV, 1901, p. 301.

6 *Zool. Jahrb., Anat.*, XXI, 3, 1905, p. 381.

7 *Zool. Anz.*, 1880, p. 205.

Switzerland and von Ledenfeld's[1] *H. hexactinella* from Queensland (which is possibly a distinct form), the following "key" will at any rate afford an approximation to the true state of the genus, so far as its forms have been investigated. It is possible that detailed investigation of the southern forms will add considerably to their number.

A. Chlorophyll-green.

I. *Hermaphrodite*—

(*a*) Tentacles shorter than body : eggs spherical, with reticulated surface.. *H. viridis.*

B. Olive-Green, Grey, Brown, Orange, Cream, or White.

I. *Hermaphrodite*—

(*a*) Tentacles not longer than body ; eggs spherical, set with coarse spines which are expanded or bifid at the tips .....*H. grisea.*

(*b*) Tentacles much longer than body ; eggs depressed, with short, simple spines on the upper part, smooth below.....*H. fusca.*

II. *Diœcious ; tentacles much longer than body* —

(*a*) Eggs subspherical, with short, simple projections on the surface ; gonads produced near the aboral pole.....*H. diœcia.*

(*b*) Normal eggs subspherical, set with fine spines which are bifid or expanded at the tip ; gonads confined to the upper part of the body ..... *H. orientalis.*

H. orientalis agrees with *H. diœcia* in several respects, but differs from it not only in the characters noted in the key but also (1) in not having the tentacles expanded at the tips ; (2) in having only from 5-6 tentacles (at any rate in Calcutta) ; (3) in producing, under certain conditions, thin-shelled eggs. Breeding females could be distinguished from egg-bearing individuals of *H. grisea* by the relative length of the expanded tentacles.

Distribution of the genus in Asia.

Extremely little is known on this point. In the latest summary of the distribution of the genus (Hartlaub,[2] 1905) no mention is made of Southern Asia ; but von Daday[3] has recorded a species from Turkestan (and also from Siberia), and Richard[4] one from Tonquin. Mr. E. E. Green and Dr. A. Willey tell me that they have taken Hydra in Ceylon ; while I have seen several specimens in an aquarium at Penang.

In India, I found numerous specimens of a polyp probably identical with *H. orientalis* attached to the roots of Duckweed at Pusa (North Bihar) in November ; but failed to ascertain the occurrence of any form either at Pamben, on Rámeswarem Island (Palk's Straits), in August, or at Port Canning, in Lower Bengal, in January. The majority of the pools investigated at both these places were more or less brackish ;

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[1] *Zool. Jahrb.*, II, 1887, p. 96, pl VI., figs., 13, 14.

[2] *Zool. Jahrb.*, Suppl. VI, 1905, p. 517.

[3] *Zool. Jahrb. Syst.*, XIX, 1904, p. 480.

[4] *Mem. Soc. Zool. France*, VII, 1894, p. 237.

but a variety (*bakeri*, Marshall)[1] of *H. viridis* occurs in brackish water in England. Recently (March 3rd–6th) I have examined living specimens, which appear to be identical with the Calcutta form, at Chakradharpur in Chota Nagpur. All of them were small and almost colourless, with five tentacles, and none were breeding. Mr. C. A. Paiva, Entomological Assistant in the Indian Museum, at the same time collected others, most of which had six tentacles, at Adra in the Manbhum District of Bengal. These too were not sexually mature.

I have no positive information as to the distribution of the form *orientalis* outside Bengal. The living individuals examined at Pusa were stouter and of a more brilliant orange-brown than any I have seen in Calcutta, and bore four buds. Several which were brought to Calcutta, however, became paler and more attenuated within three days. It would therefore seem that the individuals living at Pusa are naturally more robust than those living in Lower Bengal, probably because the temperature of Northern Bihar is considerably lower than that of Calcutta, at any rate in winter. Whether or no the Pusa race differs constantly in any respect from that of Calcutta it is as yet impossible to say.

None of the specimens of Hydra which have been recorded from Southern Asia have been chlorophyl-green in colour. It is probable therefore that the true *Hydra viridis* does not occur in India or the surrounding countries ; but it is not known how many forms do occur in Southern Asia. Possibly the only one is that which I have named *Hydra orientalis*.

II.

The statements in this section of the paper are based, as far as possible, on observations made on specimens living in natural conditions.

Throughout the winter of 1905–6, from November till April, individuals have been taken several times a week from the Museum "tank," a deep, natural pool of about half an acre's area, and have been examined immediately ; while during the corresponding period in 1904–5 more casual investigations were made. During the first half of May in the present year only a few individuals were obtained, but a considerable number have been taken during the later part of the same month and in June. In this way many hundred individuals have been observed. Attempts to keep specimens in captivity under normal circumstances have also been made, with fair success in cooler weather, but with almost complete failure during a rise in temperature, especially if the rise was sudden and considerable, and during the hot weather. The reason of this difficulty will be dealt with later under the heading "Favourable and Unfavourable Conditions."

Reproduction.

Hydra orientalis, like other forms of the genus, reproduces its kind in three ways :— (1) by fission ; (2) by budding ; and (3) by fertilized eggs.

[1] *Zeitschr. f. wiss. Zool.*, XXXVII, 1882, p. 666.

(1) *Fission*—

I have only seen three instances of this process, in all of which the split was vertical. In two cases the first indication noted was that the polyp had ten tentacles. A close examination showed that the tentacular area was elongated in a horizontal plane. A minute notch then became apparent at each side, dividing one group of five tentacles from the other. The notches increased slowly in extent, towards one another, and simultaneously two mouths were formed ; until, after two days, the crown had been completely separated into two portions. The split then extended vertically downwards, until a double-headed form had been produced.

Neither individual lived long enough in captivity to be completely divided ; but there is no reason to doubt that this would have occurred in natural conditions.

The third case was not observed until the separation was nearly complete, the two individuals merely adhering to one another by means of the ectoderm of the basal disk. Each of them had three fully-developed tentacles, while a fourth appeared in each as a minute outgrowth on the side where the split had taken place. One individual was only about half the size of the other.

In one of the first two cases I have reason to believe that the polyp had been injured by a Chironomid larva, which had attacked it ; in the others I have no evidence of any injury. It seems possible, however, as natural fission is never very common in Hydra, that it may be due, at any rate in many cases, to an accidental injury or to disease in the first instance.

As regards the Calcutta form, I have not succeeded in producing artificial reproduction by fission experimentally ; but this is what might be expected ; for the form is so delicate in captivity that even under the most favourable conditions it is difficult to keep it alive. There is every reason to suppose that in normal circumstances severed parts of the individual would grow into complete individuals, as is the case with northern forms.

I have seen one young individual in Calcutta in which one of the tentacles was bifid at the tip.

(2) *Budding*—

Budding takes place more sparingly than it does in some forms. In Calcutta I have never seen an individual with more than three buds attached, and rarely one with more than two. At Pusa, however, as already noted, I saw a polyp, probably belonging to the same form, with four buds attached. Probably buds are seldom borne at all during the hot weather. Especially towards the end of the season of greatest activity (*i.e.*, at the beginning of spring) it is very common for only one bud to be produced at a time.

The buds first appear as conical projections, at the extremity of which, during winter, five tentacles are produced simultaneously. The development of the tentacles takes place rapidly, and they become elongated in the course of a few hours at most after their first appearance ; but the bud may remain as a simple projection for some days before they appear. Before it separates from its parent a sixth tentacle is

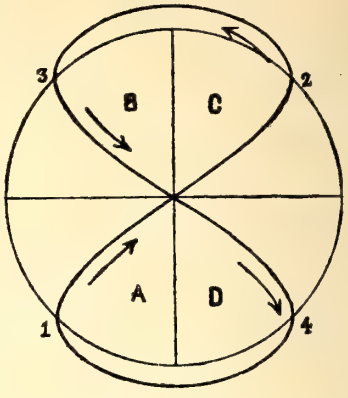
sometimes produced, first becoming visible as a minute projection between two of the others and growing out as rapidly as the original five have done. In April, however, and later in the year, only four tentacles (in a few cases only three) are generally produced by a bud. At least three weeks may elapse between the first visible existence of a bud and its separation from the mother polyp ; but I have not seen an attached bud budding or producing gonads. The final division is affected by the young individual bending down and fastening itself to some fixed object by means of its tentacles, which it uses to pull itself free.

I am doubtful whether more than four buds are produced by an individual in the course of its life. When sexual maturity approaches, budding does not altogether cease ; but it becomes less frequent and is less common in females than in males ; I have not observed an instance in which a bud actually commenced to develop after the appearance of the gonads. In budding males the bud occupies a position at or immediately below a vertical line of spermaries. I have noticed on several occasions that the bud of an adult male reaches a greater length before the production of tentacles than it does in a vigorous individual which is not sexually mature. The decrease in vigour of budding does not appear, however, to be directly brought about by the assumption of sexual maturity, but rather to be dependent on a general decrease of vigour due to unfavourable conditions, which also influence the production of the gonads. The same phenomena which I have observed as regards the buds in breeding individuals, I have also observed, after a rise in temperature, in the case of individuals which subsequently died without the appearance of the sexual organs. Towards the beginning of the hot weather, budding always becomes less active and, in some individuals, ceases altogether ; while the same thing happens during periods of temporary warmth in winter. At such times the buds also grow relatively longer before tentacles are produced than they do at the time of active budding during the fall of temperature at the beginning of winter. In December almost every individual taken from the tanks bears a pair of buds, which produce tentacles while still but little longer than broad ; whereas in March it is not very common to find an individual with more than one bud, which may be at least three times as long as broad before the tentacles commence to develop. In the latter month it is as common to find budding parents with only five tentacles, as it is to find buds with only four tentacles in April. In April, it is not uncommon for two or even three buds to be produced ; but between June and October few if any polyps bear buds.

I have not been able to cause the disappearance or retrogression of buds by starvation.

In Calcutta specimens (and also, so far as I could see, in those from Pusa) budding is confined to a distinct zone nearer to the aboral end than to the mouth when the animal is not contracted. Given a uniform degree of contraction for the whole body, this zone has a definite and constant position, which, however, cannot always be recognized, as the part of the body below it would appear to be more contractile, both in a horizontal and a vertical plane, than that above it. The more solid and indigestible parts of the food are, as a rule, retained in the upper part of the body, apparently because the part below the budding zone is contracted horizontally. Yet the latter region is

very nearly as wide as the former when the alimentary canal is empty or the food swallowed not of a bulky nature. On the other hand, when the whole animal contracts, the region below the buds becomes relatively less extensive than it was before, and often almost disappears.



Within the budding zone, which has a small vertical height, the buds appear in a definite order, at any rate during winter. Two are never produced simultaneously, although as many as three may be attached at one time. This order is illustrated in the accompanying diagram, which is based on a large number of observations made on both freshly caught and captive specimens. The circle represents a transverse section of the body through the budding zone, while A, B, C, and D are imaginary quadrants. If the first bud be produced in A, the second will be in C, the third in B or D (I think usually B)[1] and the fourth in the remaining quadrant. As regards vertical position in the zone the arrangement is not quite so regular. The second bud is generally a little higher than the first, the two representing respectively the upper and the lower limits of the zone ; but the third, although it is usually intermediate in vertical position between the first and the second, may be almost in the same horizontal plane as either of them. The fourth is neither higher than the second nor lower than the first. Although this comparatively regular order is a rule to which I have not seen an exception during the winter months, it disappears to some extent at the beginning of the hot weather, when the habits and physiology of the animal become largely disorganized.

Comment may be made on several points in the above account of the budding of *Hydra orientalis*.

In the first place, the small number of buds produced by an individual and their slow development afford evidence of a lack of vigour, which is also illustrated by the small number of tentacles, the lack of adaptability in the adult polyp and the rare production of eggs.

The fact that the first five (or four) tentacles are, as a rule, produced simultaneously is interesting as showing a condition of affairs to some extent intermediate between the two extremes which appear to occur in European forms. Haacke (*op. cit.*) bases his classification of the species which are not green on the order of production of the tentacles in the bud ; *H. tremblyi* producing six tentacles simultaneously, while in *H. rœselii* these organs appeared in an order related to the orientation of the bud and its parent.

A third point that may be noted is the position and order in which the buds are developed on the parent. Probably the small number of the buds and their slow development permit this process to be investigated more easily than would be the case in a more robust form. Evidence, which is to some extent corroborated by the

[1] For a general account of the developments of buds in Hydra see Chun in Bronn's *Thier-Reichs*, Vol. II, part II, Cœlenterata, p. 243.

position of the gonads and by the four tentacles of the spring and autumn bud, is given of something like a primitive four-rayed symmetry, which may possibly be masked by complications due to more vigorous metabolism in other species. It may be pointed out that four is a common number of tentacles for young individuals[1] of other species of the genus to possess, but the number does not appear to be quite constant in any form. Brooks[2] and others have called attention to the existence of bilateral symmetry in certain Hydroids (*e.g.*, in the larvae of *Cunina octonaria* and in *Eutima mira*) and it is not impossible that the four-rayed symmetry of this Oriental polyp may represent a stage in the production of a symmetry which seems superficially more simple.

(3) *Sexual Reproduction*—

I have already stated that *Hydra orientalis* is dicœcious, and this will be a convenient point at which to give the evidence on which I rely in regarding those individuals which produce spermatozoa as distinct from those which produce eggs. In the first place, if a large number of individuals are kept together in captivity, a proportion (approximately one half) of them develop male gonads, unless they all die shortly after capture. The remainder either bear eggs or die before showing any signs of sexual activity. The males continue to produce spermatozoa for a period varying from a few days to a fortnight or rather more, and then die. The females die after producing one, two, or three eggs, their life after they have reached sexual maturity being limited to a period of a week or less. I have not known eggs to be produced in cold weather ; but spermatozoa have been produced by males living in unnatural conditions in my aquarium even during normal winter weather. I have failed to keep a male alive even until the contents of all its spermaries have been discharged.

The following experiment would suggest that individuals assume one sex or the other at a very early stage. Four small, colourless polyps, each with four tentacles, were placed, in the middle of November, in a small, narrow glass jar containing clear tap water in which a few Cladocera had been liberated. The jar was kept in a room with closed shutters, which not only kept out the light but rendered the air extremely close. Certain other animals (*e.g.* mosquito larvae) kept under the same conditions did not survive for a single night ; but the Cladocera continued active. Of the four polyps none produced an additional tentacle, increased in size, became darker in colour, nor attempted to feed ; but one of them, after ten days, commenced to develop certain outgrowths, which a microscopical examination proved to be immature spermaries. Before they became ripe it died. The remaining three polyps lived for some weeks without apparent change, and then died also. In every case in which I have attempted to repeat this experiment, or to ascertain the effect of starvation on the polyps, my "material" has perished, without producing either buds or gonads.

In spite of the evidence given above as to the distinction of the sexes in the species (which evidence is mainly negative), it is possible that hermaphrodite individuals may

[1] See Kleinenberg's *Hydra*, p. 78, pl. III, fig. 14.

[2] *Zool. Anz.*, VII, 1884, p. 710.

be produced occasionally, as exceptional cases ; but I have been unable to note any indication of the occurence of such individuals. It must also be remembered that Brauer in Europe and Downing in America agree in regarding the form named *Hydra diœcia* by the latter as diœcious, and that W. Marshall's[1] statement as to *Hydra viridis* being protandrous have not been corroborated. It is evident that a large supply of reserve material is necessary for the production of eggs, and it does not seem altogether probable that a form so delicate as *H. orientalis* would be able to expend such material after the production of a considerable number of spermaries, the bearing of which obviously exhausts the organism.

The circumstances which favour sexual reproduction are difficult to ascertain in the case of an animal which cannot be kept in captivity under altogether normal conditions ; but observations on freshly captured individuals, compared with those made on captive specimens, lead me to the conclusion that temperature is a most important factor in the induction of sexual maturity.

I have never seen an individual living in its natural environment which showed any signs of sex during the fall in temperature at the beginning of winter, or after the rise in temperature had become steady in spring ; but during the winter of 1905-6 I noted that any considerable rise of the thermometer was invariably followed by the appearance of spermaries on about half the specimens in my aquarium. As a rule, the organs became visible to the naked eye on the third day after the rise in temperature commenced, and they were produced, and even reached maturity, if the thermometer fell again after the second day. The same phenomenon occurred, except that as much as a week often elapsed before the appearance of the spermaries, among individuals living free in the "tank." The majority of the captive specimens which did not produce spermatozoa in these circumstances, died ; but on two occasions a few neither proved to be males nor died, but bore eggs. They did not do so until the males in the same glasses had been discharging spermatozoa for some days. The temperature this season was unusually high during the latter part of December, and the fact may have upset the normal course of reproduction among the polyps, as a large proportion of them perished owing to the heat. I have not been able to find a single female with ovaries or eggs in the "tanks" during the year, and I only found one or two specimens (in March) in 1904-5. Judging from observations on captive specimens, it would seem that an essential factor in the production of ova is a period of comparatively low temperature and active nutrition, followed by a sudden, but not an excessive, rise of temperature. Such conditions frequently occur in the natural environment of the species, but not invariably. They are only too easily produced in an aquarium.

I have noted above that a proportion of the polyps kept in an aquarium during winter have invariably proved themselves males, if they survived for more than a short period. Except at the very beginning of the season the spermaries have become visible in a week, if there has been no considerable rise in temperature. Spermatozoa were produced even when the polyps were abundantly provided with food and with

[1] *Die Entdeckungsgeschichte der Süsswasserpolypen.* Leipzig, 1885. I have been unable to consult this work in Calcutta.

oxygen from growing plants, which also gave them shade. The development of the gonads was slower when they were kept in enamelled-iron or earthen vessels than in glass jars. If the glass jars were placed in a dark corner, the appearance of the spermaries was also retarded ; but in this case the plants were less vigorous and the water was consequently less well supplied with oxygen, which may be an important factor in reproduction. It is not easy, especially under tropical conditions, to distinguish between the direct effects of light and those of heat, and there are practical difficulties in shutting off light from an aquarium in Calcutta, as this appears to encourage the growth of a bacterium which turns the water foul. I am inclined to think, however, that light is quite a secondary factor in the induction of sexual maturity, if it is of any direct importance at all.

Spermaries—

I have not investigated the early stages in the development of either the spermaries or the ovaries, my observations having been confined hitherto to living "material." Superficially the spermaries resemble those of *Hydra viridis*. The first to appear are arranged in two vertical rows situated in opposite quadrants of an ideal cross-section of the body and near the tentacles. As a rule, the uppermost organs attain maturity first, and others appear below them in the same vertical line. This process goes on until the two rows reach the upper limit of the budding zone, on which they do not trespass. Spermaries also appear in the two remaining quadrants, showing a tendency to be arranged in vertical rows but not being quite constant in this respect. From eighteen to twenty-four testes are produced by a vigorous individual ; but it usually dies before the whole of them are mature.

In their earlier stages the individual spermaries are mound-shaped and solid ; but on approaching maturity they become mamilliform and a large cavity is developed within the organ. As the spermatozoa are formed from the sperm mother cells they escape into this cavity and take up a position with their "heads" facing outwards. Their motile "tails" are already active, and, as a mass of them accumulates in the cavity, they are gradually thrust outwards by the movements of the "tails," until a passage is bored through the pap-like projection at the free extremity of the organ. At least two hours are occupied in this process, but when the passage has once been forced it remains open as a duct for the exit of freshly formed sperms. The spermary gradually collapses as its contents are thus discharged and soon resembles an unripe testis in appearance. I have not known one to be altogether re-absorbed after becoming functionless.

At least two, sometimes as many as five, days elapse between the first appearance of a spermary and the escape of its sperms.

The spermatozoa resemble those of *Hydra fusca*, except that the "heads" are perhaps a little broader and shorter relatively.

There are several interesting points in this account of the male organs. In the first place, their position on the body is a further argument in favour of the idea that something approaching four-rayed symmetry exists in *Hydra orientalis*. The fact that

they are confined to the upper part of the body causes the species to resemble *Hydra viridis*, *H. fusca* and *H. grisea*, rather than *H. diœcia*, in at least one respect; but in the hermaphrodite species the upper testes are the most immature. The development of a bud at the lower limit of a vertical row of spermaries supports Lang's[1] views, based on histological research, as to the homology between buds and testes in the genus. The development of the spermaries appears to be slower than it is in some forms of Hydra, and I have not been able to see, working with living specimens, the walls of the elongated epidermal cells which divide up the lumen of the spermary in some forms; but it is probable that they exist until the active spermatozoa break them down.

I have not observed the fertilization of the ovum, but there is no reason to regard it as in any way abnormal.

Ovary—

The ovary is a minute globular body seated deep in the ectoderm and resembling that of *Hydra diœcia*. It persists after the production of an egg and possibly produces a second egg under natural conditions, although I have not known it to do so in captive specimens. On one occasion I saw an ovary which had not yet produced an egg, disintegrate owing to the wandering apart of its component cells, which appeared to join those of another ovary higher up on the trunk of the parent. The latter organ had already borne an ovum. The eggs (if more than one is produced) are borne on two opposite quadrants of a transverse section of the body; but not in any definite order, except that the uppermost ones usually mature first. They are confined to the upper half of the body. Two may be produced in one quadrant before the appearance of a third in the other.

The egg first becomes visible to the naked eye as an intensely white, star-shaped body lying at the base of the ectoderm. It increases in size rapidly, gradually draws in its pseudopodia (the rays of the star) and makes its way through the ectoderm to the exterior. The process occupies not more than two hours. The issuing ovum does not destroy the ectoderm cells as it passes out, but squeezes them together round the aperture it makes. Owing to the pressure it exerts upon them, they become much elongated and form a cup, in which the embryo rests on the surface of the parent. By the time that the egg has become globular, organic connexion has ceased to exist. The embryo is held in position partly by means of the cup of elongated ectoderm cells and partly by a delicate film of mucus secreted by the parent.

Before segmentation commences, a thin but extremely opaque membrane is secreted over the egg, apparently by the ovum itself, and the process of development is thus hidden. The surface of this membrane has a tesselated appearance.

In from twenty-four to forty-eight hours after the egg has issued through the ectoderm, its outer membrane commences to break up, and it is not until it does so that it is possible to distinguish a thick-shelled from a thin-shelled egg.

If the egg belong to the thick-shelled variety, it can be seen by the naked eye when

[1] *Zeitschr. f. wiss. Zool.*, LIV, 1892, p. 377.

fresh to have a rough surface of a yellowish colour ; but its external characters are concealed after a short time by the minute particles of extraneous débris which are retained by the spines on its surface. These spines cover the whole surface except a small, flattened, subcircular area at the point at which the egg is in contact with the mother polyp. This area is naked and almost smooth.

Should the egg be thin-shelled, it is covered, when the external membrane ruptures, merely by a smooth, semi-transparent membrane, which is to a certain extent elastic. At first there are a couple of ridges on its distal pole which are parallel to the main axis of the polyp and look like the tumid lips of an opening ; but I have not been able to detect any aperture. As the embryo increases in bulk, the ridges disappear on account of internal pressure, and only a single, small, simple, knob-like projection remains, its position marking the pole furthest from the point of emergence of the ovum. It is clear that eggs of this kind lack the thick horny shell which the cells of the ectoderm usually secrete in the young embryo of Hydra. So far as my investigations go, they differ in no other respect from normal eggs.

Thin-shelled eggs are produced either after the production of one or more thick-shelled eggs or by unusually small parents which have only a single ovary. I have known a case in which one thin-shelled and two thick-shelled eggs were attached to the same individual at the same time. It would therefore appear that the degenerate condition of the thin-shelled egg is due to exhaustion on the part of the parent. In this connection it is perhaps worth emphasizing the fact that the eggs are produced with greater rapidity than are the spermatozoa. No surprise need be caused by the production of degenerate eggs if we consider that during the course of a year not a single individual was found which bore eggs at all, under natural conditions. I am inclined to believe that sexual reproduction plays a very unimportant part in the life cycle of *Hydra orientalis*, and that when it occurs it is almost a pathological phenomenon. I was formerly led to take a very different view, *viz.*, that large numbers of eggs were produced in spring and lay dormant during the hot weather, the adults invariably perishing about the end of March. But the discovery that budding, after becoming temporarily less common in March, again becomes more common in April, that buds produced late in the season have often only four tentacles, and that polyps are found occasionally during summer,appears to agree with the ascertained facts that few individuals bearing eggs are found in a state of nature and that no such individuals have been seen at any season except the beginning of spring. The production of spermatozoa does not call for the same expenditure of reserve material as does that of eggs, and it must therefore be expected that the organism will be more liable to return to the ancestral condition as regards the production of the former than as regards that of the latter. The vast majority of the sperms produced by most animals perish without fertilizing ova, and it is by no means impossible that the males of *Hydra orientalis* are practically instances of atavism, parallel to rarer instances of the same phenomenon in the case of females in the same species ; in other words, that a local race of Hydra has been produced from ancestors in whose life cycle sexual reproduction played an important part, and that in this race budding has become the normal method of continuing the species.

It may further be pointed out that in Protohydra and Microhydra, forms which there is good reason to regard as degenerate and not as primitive, sexual reproduction is not known to occur.

Development of the Egg—

The eggs generally adhere to the parent until the latter dies. Before dying it retracts its tentacles and sinks to the bottom. If three eggs are produced, however, the first may fall off and sink independently before the parent becomes moribund.

I have not been able to rear eggs in my aquarium. Thick-shelled eggs lay at the bottom for some weeks and then broke up ; while thin-shelled eggs degenerated within a few days of their production. The ectoderm cells parted from one another and ruptured the envelope of the egg. They then became amœboid and moved slowly in different directions for some hours before dying. The endoderm cells, only a few of which were present, assumed a spherical form, remained stationary, and perished rather more rapidly. Their contents were more homogeneous and transparent than those of the ectoderm cells.

Duration of Life.

The duration of life of *Hydra orientalis* is evidently short. In captivity individuals rarely live for more than a few weeks, while in the natural environment there is evidence that they do not survive for many months. In the cold season of 1905-06 most specimens found in the middle of November were extremely small, with only four tentacles. A fortnight later all but a few had grown two additional tentacles, had increased greatly in size, and were producing buds. The hot weather which commenced at the beginning of the last week in December, killed most or all of these parent individuals, only smaller and attenuated examples, which had recently been buds, remaining in the "tank." Most of these had five tentacles when set free, the others having six. A few weeks later it was quite exceptional to find a budding individual with only five tentacles. This brood also perished shortly, for the individuals found in the latter half of March and in April had, in a large proportion of cases, five tentacles only ; while those found in May and June were generally devoid of buds and as a rule had four tentacles, closely resembling individuals taken in the previous November. These observations refer to a single pond. It is therefore probable that under the most favourable conditions an individual of the species may live for several months, but that a few weeks is not uncommonly the period of life. If this be so, the short life of the individual is another instance of the low vitality of the Bengal form as compared with its European congeners, which have been known to live for as long as two years in captivity. The evidence regarding the Bengal species, however, refers only to Calcutta.

Favourable and Unfavourable Conditions.

It may be well to point out briefly the conditions which appear to be favourable or unfavourable to the occurrence, growth and survival of the species in its natural surroundings. In the town of Calcutta I have only found the polyp very abundant in

one "tank." This pool has at least three attractions :—(1) it is deep in the centre and has shallow edges; (2) it supports a luxuriant growth of the water-plant Limnanthemum and, (3) it is densely shaded at one side. The formation of the pool is beneficial to the polyp for the following reasons :—the shallow edges afford abundant food during the cold weather, while the deeper centre offers a comparatively cool retreat during summer. The leaves of Limnanthemum, which float on the surface and are attached to a long stalk growing up from the bottom, are the favourite station of the polyp during winter and early spring. Habitually it remains attached to their lower surface, with its body hanging down in the water; but if the sunlight grows too strong, it makes its way down the stems of the plant and takes shelter among the young leaves which have not yet reached the surface, or the roots which grow out from their base. Should this position become uncomfortable in the unshaded part of the "tank," the animal moves to those parts which are shadowed by trees and rushes. I have pointed out elsewhere[1] that snails of the genus Paludina play an important part in such migrations. If the temperature rises suddenly, Hydra will be found not among the floating leaves of Limnanthemum, but on the submerged portion of the plant. After a high temperature which has remained steady or risen for several weeks, the polyp forsakes the open part of the pool altogether; while during summer it is found very rarely in shallow water. On one occasion, however, towards the end of May, during a few days' comparatively cool weather, I found large numbers of individuals at the shaded edge of the pond.

In captivity three circumstances are most inimical: firstly, a sudden rise in the temperature, which may either kill the polyp directly or cause it to hasten its decease by becoming sexually mature; secondly, the lack of a free current of air on the surface of the aquarium; and, thirdly, the growth of a bacterium, which forms a scum on the top of the water and clogs up the interstices between the leaves and stems of the water-plants, soon killing them. If adult polyps are kept even in a shallow opaque vessel which is shut up in a room with closed shutters they generally die in a single night; indeed, they rarely survive for more than a few days unless the vessel is placed in such a position that air is moving almost continuously over its surface. The bacterium to which I allude practically seals up the aquarium, especially in March and April, when its growth is very rapid. Strands of slime produced by it often surround the polyp and even enter its mouth. In this event the polyp retracts its tentacles until they become mere prominences on its disk, and shrinks greatly in size. The pigment in its body becomes broken up into irregular patches owing to degeneracy of the endoderm cells, and it dies within a few hours. (As I have dealt elsewhere[2] with the enemies and the prey of *Hydra orientalis*, I need only refer here to the Chironomid larva which feeds on it in Calcutta.)

Adaptability to unfavourable circumstances is more marked in young than in older individuals. When adults die in an aquarium owing to a rise in temperature or

[1] *Journ. Asiat. Soc. Bengal*, III, 1906, p. 111. [2] *Ibid.*, p. 112.

any other cause, buds which have recently been set free frequently survive them. The same phenomenon occurs, so far as it is possible to judge, in the natural habitat; for at any rate the majority of individuals of the generations which succeed one another in the "tanks" during the year, originate as buds.

Feeding.

The feeding of European and North American species of Hydra has been dealt with from different points of view by a large number of writers. I have little to add to their observations, as the Bengal species does not differ at all notably from those of colder latitudes in its methods of ingesting food. There are, however, one or two observations on this function which I should like to record. In the first place, it has been a matter of controversy as to what part the tentacles play, and whether they are actually thrust into the mouth when food is swallowed. In the case of *Hydra orientalis* these organs are frequently introduced into the alimentary canal, and not only when the animal is feeding. If a specimen is removed from any object to which it may be adhering and placed in a watch glass full of water, a short period of complete retraction both of the body and the tentacles takes place. Then the body becomes much elongated and the tentacles moderately so. The mouth is often opened, and any food which may be in the upper part of the alimentary canal is sometimes ejected. After this has occurred the tips of the tentacles writhe in all directions and are repeatedly thrust into the mouth and withdrawn again. During the process of ingestion the tentacles are occasionally thrust into the mouth, but not invariably.

As to the discharge of the nematocysts and their exact function, the largest form of cell shoots out its stinging thread very much more readily than the smaller types do, and this is the case whether the polyp is catching prey or merely suffers accident. Thus, if a specimen is placed in a drop of water on a slide and a cover glass lowered gently over it, a considerable number of the largest stinging cells explode and the thread is emitted; but if a drop of alcohol is allowed to mix with the water, a few of the smaller threads are also shot forth. I have examined small Crustacea and Hydrachnids captured by the polyp and have always found the larger threads adhering to them, but never the smaller. The discrepancies in the different accounts given of the discharge of the nematocysts by different authors probably point to a variation as regards this phenomenon both in respect to different species and to different conditions.

In the latest account[1] of the movements and reactions of Hydra it is stated that the nematocysts are only discharged normally under the influence of chemical stimuli, although they may be actually forced to emit their threads by direct pressure. On the whole, such observations as I have made support this view; the following especially. A small Hydrachnid came in contact with a tentacle of *Hydra orientalis* and was captured by it. On an examination of the Hydrachnid I found that although the polyp's nematocysts were scattered indiscriminately on the limbs of the prey and had

[1] By G. Wagner in *Quart. Journ. Micr. Sci.*, Vol. XLVIII, 1905, p. 585.

there pierced the comparatively weak integument, this was not the case as regards the mite's body, which was covered with a greatly thickened chitinous layer pierced by pores through which sensory hairs emerged. The threads were arranged in groups at these pores, their barbed heads pointing towards them, and a few had actually penetrated the integument at the base of the hairs. I have repeatedly seen small Hemiptera[1] (which have a thick integument) and Ostracods temporarily paralysed by coming in contact with the tentacles of the polyp; and, occasionally, the same thing has occurred in the case of large Cladocera, which have touched the tentacles with their shell only. In these cases the polyp has made no attempt, so far as could be seen, to retract the tentacles, but has remained still, with the tentacles fully extended, until the insect or crustacean fell off, apparently owing to its own weight. The Hemiptera, although they did not struggle, were little affected and swam away immediately or almost immediately after being released; but the Crustacea sank through the water for some little distance before swimming away, although the limbs of the Ostracods were sometimes observed to move slowly even while the animal was held prisoner. Even the Crustacea recovered their normal powers of movements before reaching the bottom. I have seen soft-bodied insect larva larger than these Ostracods and Hemiptera swallowed without difficulty, and also Cladocera as large as those which escaped.

One important factor in the swallowing of food which appears to have escaped notice, is the mucus secreted by the alimentary canal. This substance is so transparent that it can hardly be detected when uncontaminated; but if the upper part of the canal contains faeces when food is swallowed, they are ejected with the mucus and the latter is stained. When suitable prey has been seized and killed the tentacles contract, bringing the food towards the mouth, which then opens and is thrust out like a proboscis. As the tentacles approach it a cloud of mucus is ejected from it and envelopes the food. This greatly assists in the process of ingestion,[2] as the food is now, as it were, anchored to the interior of the gut, the mucus being extremely tenacious.

After swallowing food, the polyp, as I have noted above, assumes temporarily the form of a wine-glass, owing to the food being retained in the upper part of the alimentary canal and so causing the walls of the body to bulge out in this region. The soluble parts of the food pass down into the lower half of the body, where they remain until the whole or a part of their digestible constituents has been removed. The residue is then ejected from the mouth together with the harder tissues, which are thus got rid of unaltered, never having reached the inferior section of the gut. Complete digestion, after which the faeces consists of a white floculent mass, takes from three to four days; but digestion is by no means always complete. This is a point to which I must return later when dealing with the colours of the polyp.

Hydra orientalis feeds chiefly in the early morning, before the sun has risen high above the horizon. In an aquarium the polyps remain with their tentacles partly retracted during the night. If they are hungry, however, they may extend these organs to

[1] Identified by Mr. W. L. Distant as *Plea pallescens*. This is perhaps the commonest insect in the Museum "tank" during winter.—N. A. 4-7-1906.

[2] Cf. Duerden on the "Role of Mucus in Corals," *Quart. Journ. Micr. Sci.*, XLIX, 1906, p. 591.

their greatest length during the heat of the day. Frequently the tentacles, when in this condition, are so arranged as to resemble a net bellying out in one direction. They hang down close and parellel to one another and are all curved in the middle, just as though a current was directed against them in the water. When they are in this position, prey which chance to swim amongst them, has little chance of escape. Before assuming the attitude they hang down in the water, or are occasionally directed upwards, being held straight except for a slight outward flexure at the base. It is not uncommon, however, for one of the tentacles to remain contracted while the others are fully elongated. In some cases it appears that a specific tentacle has a greater tendency to contract than the others ; but whether this tentacle is the one produced latest I have been unable to ascertain, and the matter is one which requires further observation.

Movements.

The question of the movements of Hydra is one which has been very thoroughly investigated as regards European and North American species, with practical unanimity on the part of the investigators as to the main features of progression. There are two points, however, in which *Hydra orientalis* differs in this respect from northern forms : (1) it moves away from light, while they are attracted towards light ; and (2) it does not progress by "looping" as they do, but by alternately expanding and contracting its body without raising it from the surface on which it crawls.

That the European Hydræ move towards light was observed by Trembly (whose classical memoir I have, unfortunately, been unable to consult) and other early observers, while more recently E. B. Wilson,[1] and G. Wagner[2] have published details showing the actual course taken by an individual in a given time. If a number of specimens of *Hydra orientalis* be placed in a glass jar half of which is illuminated while the half is in shadow, they will be found, after a few hours, to have deserted the bright side and taken up a position on the shady one, not all together but scattered rather widely apart. The majority will also make their way towards the bottom. They appear to move more nearly in a straight line than northern species do, and, as soon as they have escaped from the bright light, they settle down and often remain in the same position for the rest of their lives. It is only an unfavourable change in conditions such as a rise of temperature, or fouling of the water, that causes them to move again. In natural circumstances buds rarely move far from their parents unless such changes occur. Young individuals, however, appear to change their situation more readily than older ones, and hence possibly arises their greater immunity to unfavourable conditions, the older ones often perishing because they do not move away from an unsuitable situation. I have already pointed out that migrations take place in the "tank" in accordance with changes in the weather. Probably heat is the real cause of the polyp's apparent dislike of light.

The modes in which such migrations are performed are at least three : (1) by the polyp fixing itself to a mollusc, (2) by its crawling, and (3) by its floating. The last mode is adopted mainly by young individuals, which expand both their tentacles and

[1] *Amer. Naturalist*, XXV, p. 413, 1891.

[2] *Quart. Journ. Micr. Sci.* XLVIII, 1905, p. 587.

their bodies to the utmost, and stretch out the former organs like a halo round the mouth. In this position they have almost the same specific gravity as water and are carried along most readily by slight extraneous movements, generally with the tentacles uppermost. Practically this mode of progression is the same as that adopted by some young Actinians, although it is brought about in the case of the latter by the body assuming a globular form and the tentacles contracting. Older individuals sometimes float tentacles downwards with their bases attached to small objects, such as cast skins of Entomostraca, on the surface or in mid-water ; while, occasionally, the aboral pole is thrust through the surface film, the tentacles being spread out in a circle below and giving the body some support. In this position the base is not attached to any other object. On one occasion I saw a polyp bend down its " head " and emit from its mouth a mass of slime, to which the basal disk attached itself ; but I have not been able to repeat the observation and can offer no explanation of the action.

The polyp crawls for short distances with considerable rapidity. The body is stretched out and bent down in such a way that it is in contact for the greater part of its length with some foreign surface, the basal disk still maintaining its attachment. The tips of the tentacles are then applied to the surface as far away as possible, the disk is set free and the body contracts. The disk is then applied again to the surface and the same process is repeated. The body, however, is not bent into an arch, and indeed is only bent at all for a very small part of its length just above the aboral pole, and this only at the commencement of each forward movement. I have not observed any spiral twisting. On several occasions I have noticed a polyp which was attached to the root of a floating plant stretch out one of its tentacles and apply the tip to an adjacent root. Then, releasing its basal disk, it contracted its body and, as it maintained a firm hold with the tip of the tentacle, passed from one root to the other. Finally it bent down the proximal part of its body until it lay nearly parallel to the second root and fixed its basal disk thereon. Zykoff [1] has stated that pseudopodia are extruded from the tentacles of Hydra during progression and has even figured the structures. Other observers, including myself, have failed to see these pseudopodia ; but it is difficult to be certain that they do not exist. Possibly the cnidocils may assist the tentacles in maintaining a hold, and it is noteworthy that in *Hydra orientalis*, in which the body adheres to the surface along which the animal is crawling, the cnidocils are long and abundant on the body, especially on its anterior part.

The periodic movements which Wagner (*op. cit.*) has observed in European species of Hydra, take place to some extent also in the Bengal form ; but I have been unable to satisfy myself that these movements are strictly periodic or rythmical. Approximately once in half an hour the direction of the tentacles is changed ; but the period varies within very wide limits. I have obtained no evidence, moreover, that there is any correlation in this respect between the movements of a parent polyp and those of buds still attached to it. Indeed the buds are often completely contracted while the parent is expanded, and *vice versâ*.

[1] *Biol. Centralblatt*, XVIII, p. 272, fig. 1, 1898.

Colour.

The colour of *Hydra orientalis* varies greatly in different individuals and even at different times in the same individual; it also varies as regards the whole race at different seasons.

When the polyps become common in the "tanks" in autumn, young four-rayed individuals are colourless; but adults and the five-rayed buds they produce are either deep olive-green (often so dark that it is almost black) or orange-brown. In Calcutta the latter shade is never very bright. Green individuals are at this season commoner than brown ones, and it is rare for green ones and brown ones to be found on the same plant. The buds of coloured individuals are of the same shade as their parents. As the season progresses the number of brown individuals increases relatively, and others appear which are neither green nor brown but of a peculiar shade which appears to be as nearly as possible intermediate between the two formerly occurring. It is soon difficult to find an individual of the intense green prevalent in November, and though orange-brown examples are less rare, they have a dull, faded appearance. As early as the middle of February the greater majority of the specimens examined in 1906 were of the intermediate shade, while some were already almost colourless. Polyps taken between May and October show, at most, the faintest trace of colour. In captivity both brown and green individuals assume the intermediate shade within a few days of capture, and it is then impossible to distinguish between them. Finally, if they live long enough, they become colourless. The few individuals which have produced eggs in my aquarium have, however, retained a greenish colour; while males, before producing spermaries, frequently became of an opaque, milky white, owing to the presence of liquid globules in their endoderm cells.

The colouring matter of coloured individuals is not equally distributed all over the body, but is most dense above the budding zone and immediately round the aboral pole. It is sometimes almost absent from the tentacles.

In this species colour is not due to the presence of symbiotic algæ, but to minute, amorphous particles in the cells[1] of the endoderm. Downing[2] points out that the species of Hydra other than *H. viridis* change colour in accordance with their food. That this is the case with *Hydra orientalis* I have little doubt; but I have not been able to prove the fact experimentally, because captive specimens lose instead of changing their colour.

This loss of colour is not always due to actual starvation. I believe it is generally due to what may be almost called a form of indigestion. As I have already pointed out, full digestion is a slow process and the faeces remaining after it are white and floculent. Under unfavourable conditions, however, such as obtain in an aquarium even when food is abundant, full digestion does not take place. Food is only partially digested and the faeces ejected from the mouth are brown and granular; should the prey have been of a greenish colour, they may be tinged with green. That the origin of the colour of the

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[1] Cf. T. J. Parker on *Hydra fusca* in *Quart. Journ. Micr. Sci.*, XX, 1880, p. 222.

[2] *Zool. Jahrb., Anat., XXI*, 3, 1905, p. 381.

coloured individuals lies in the granules which are rejected by polyps in unfavourable circumstances, there can, I think, be little doubt. My statement of the facts is founded on a large series of observations. It would appear, therefore, that the cells of the endoderm are unable to ingest solid particles except when the whole organism is in a vigorous state, and that if it is not vigorous they can only absorb the liquid constituents of the food. Probably temperature plays an important part in this physiological change.

Summary.

Hydra orientalis is related to *H. grisea*, which it resembles in the structure of its normal egg. The number of tentacles differs at different seasons, in different generations. The limits of the geographical distribution of the Bengal species are still unknown.

Comparatively few buds are produced. During winter they appear in a definite order, which ceases to be constant as the temperature rises in spring. Vertical fission occurs occasionally. The species is dicœcious ; but sexual reproduction appears not to play an important part in its biology. A rise in temperature induces a proportion of the individuals present in an aquarium or a pond to develop testes ; if considerable, it may induce a few of those that remain to produce eggs. As a result of exhaustion eggs are sometimes produced which do not secrete a horny outer shell. Individuals are short-lived and perish after sexual reproduction, several generations being completed in a year.

The organism is more delicate than in the case of European species. The animal does not adapt itself readily to a change of conditions ; but young individuals do so more readily than older ones. Heat is most inimical to its life.

As regards the capture and ingestion of food *H. orientalis* resembles European members of the genus. Mucus secreted in the alimentary canal plays an important part in the process. The more solid parts of the food do not descend to the base of the alimentary canal but are retained in the upper part.

H. orientalis, unlike northern species, moves away from light, probably because it is repelled by heat. It progresses chiefly by crawling, the body not being looped. Young individuals are distributed more readily than older ones, because their specific gravity, when they are fully expanded, closely resembles that of water, and because, perhaps consequently, they are more active in their habits.

Colour is not due to a symbiotic organism but to the presence in the endoderm cells of solid particles derived from the food. Under unfavourable conditions these cells become incapable of ingesting solid particles and consequently the polyp loses its colour.

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ANIMALS IN THE INSCRIPTIONS OF PIYADASI.

BY

MONMOHAN CHAKRAVARTI, M.A., B.L., M.R.A.S.

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By Monmohan Chakravarti, M.A., B.L., M.R.A.S.

Introduction.

The rock edicts and the pillar edicts of Piyadasi contain various references to animals, animals in general, and animals specially named. This subject is so interesting that I propose to discuss it briefly in this article. I have followed Bühler's readings, and use the following abbreviations for the names of places :—

1. General rock edicts—

Girṇār—G.
Ṣāhābāzgāṛi—Ṣ.
Manserā—M.
Kālsī—K.
} Epigraphia Indica II, pp. 447–472.

Dhauli—Dh.
Jaugaḍa—J.
} Archæological Survey of South India, Vol. I, pp. 114–125.

2. Special rock edicts—

Dhauli special edicts—Dh. sp.
Jaugaḍa ,, ,, J. sp.
} A.S.S.I. I., 125–131, and M. Senart in the Indian Ant. 1890, pp. 82–102.

Siddapura edicts—Si., Ep. Ind. III., pp. 138-142.

3. General pillar edicts—

Delhi-Sivālik—Ds.
Delhi-Miraṭ—Dm.
Allāhābād—A.
Radhiā—R.
Mathiā—Mat.
Rāmpūrvā—Rām.
} Ep. Ind., II., pp. 245–274.

I. Animals in General.

Animals, general names.

References to animals in general lie scattered throughout the edicts. The following words are used :—

(i) *Jīvaṁ* (G. ed. i. line 3, J. i. 1, Dh. i. 1), *jīve* (Ṣ. i. 1, M. i. 1, K. i. 1) ; *jīvesu* (J. iii. 12, Dh. iii. 11, *pānānaṁ* in the rest) ; *sa-jīve* (Ds. v. 9, Dm. v. 2, A.v. ? 23, R. v. 6, Mat. v. 7) ; *jīvena jīve* (Ds. v. 11, Dm. v. 4, R. v. 7, Mat. v. 8, A. eff.) ; *jīva-nikāyāni* (Ds. v. 14, Dm. v. 8, R. v. 9, Mat. v. 11, A. eff.).

Cf. *jīvitāye* (Ds. iv. 17, Dm. iv. 11, A. iv. 18, R. iv. 21, Mat. iv. 26, Rām. eff.).

(ii) *Prāṇa-sata-sahasrāni* (G. i. 9), *praṇa-śata-sahasrani* (Ṣ. i. 2, M. i. 4), *pānasahasāni* (K. i. 3), *pāna-sata-sahasāni* (J. i. 3), *pāna-sata-sa...* (Dh. i. 3); *prāṇā* (G. i. 11, 12), *praṇa*, *praṇa-trayo* (Ṣ. i. 3), *praṇani* (M. i. 4), *pānāni* (K. i. 3, 4, J. i. 4, Dh. i.4, one eff.); *prāṇānaṁ* (G. iii. 5, iv. 6, xi. 3), *praṇananaṁ* (Ṣ, iii. 6 *pra.*, iv. 8, ix. 19, xi. 24, M. iv. 14), *pānānaṁ* (K. iii. 8, iv. 10, ix. 25. xi 30, J. iv. 17, Dh. iv. 15, Ds. vii. 2. 10), *praṇana* (M. iii. 11, ix. 5, xi. 13); *prāṇ-āraṁbho* (G. iv. 1), *praṇ-araṁbho* (Ṣ. iv. 7), *praṇ-araṁbhe* (M. iv. 12), *pānālaṁbhe* (K. iv. 9, J. iv. 14, Dh. iv. 12); *pāṇesu* (G. ix. 5), *pānaṁ* (K. ix. 25), *pānesu* (J. ix. 6, Dh. eff.); *praṇa-śata-sahasre* (Ṣ. xi. 1), *praṇa-śa....*(M. xi. 1), *pāna-śata-ṣahaśe* (K. xi. 35, G. effaced); *pāna-sata-sahasesu* (Ds. iv. 3, R. iv. 4, Mat. iv. 18, rest eff., Ds. vii. 2. 1); *pāna-sahasesu* (J. sp. i. 2, Dh. sp. i. 4.); *praṇesu* (Si. i. 9, ii. and iii. eff.).

[Cf. *ā-pāna-dākhināye* (Ds. ii. 13, Dm. ii. 6); and *ā-pāna-dakhināye* (A. ii. 6, R. ii. 9, Mat. ii. 10, Rām. eff.]

(iii) *Bhutānaṁ* (G. iv. 1, 6, K. iv. 9, 10, vi. 20, Ds. vii. 2. 9); *bhutanaṁ* (Ṣ. iv. 7, 8, vi. 16, M. iv. 12, vi. 30); *bhutana* (M. iv. 14); *bhūtānaṃ* (J. eff. and iv. 17, Dh. iv. 12, 15, G. vi. 11, J. eff., Dh. vi. 32); *agra-bhuṭi* (Ṣ. xiii. 4, G. eff.); *agra-bhu* (M. xiii. 4); *aga-bhuta* (K. xiii. 37); *sava-bhūtānaṁ* (G. xiii. 7); *savra-bhutana* (Ṣ. xiii. 8, M. eff.); *Ṣava-bhu* (K. xiii. 4).

(iv) *Jātāni* (Ds. v. 2, A. v. 20, R. v. 1, Mat. v. 2, Dm. eff., Ds. vii. 2. 9).

N.B.—For a different meaning (disposition), See *jātehi* (J. sp. i. 5, Dh. sp. i. 10); *jātāni* (J. sp. i. 6); *jātā* (Dh. sp. i. 12).

(v) *Pasu-cikicchā* (G. ii. 5); *paśu-cikisa* (Ṣ. ii. 4, M. ii. 7); *pasu-cikisā* (K. ii. 5, J. ii. 8); *pa. i. isā* (Dh. ii. 6); *pas-opagāni* (G. ii. 6, K. ii. 5); *paś-opakāni* (Ṣ. ii. 5); *pa-kani* (M. ii. 7); *pasu-opagani* (J. ii. 8, Dh. ii. 7); *pasu-manusānāṁ* (G. ii. 8), *paśu-manuśānaṁ* (Ṣ. ii. 5), *paśu-manuçana* (M. ii. 8), *pasu-munisānaṁ* (K. ii. 6. Ds. vii. 2. 3),.....*naṁ* (Dh. ii. 8, J. eff.).

The above references show that *jīvani* (living beings), *pānānaṁ* (animated beings), *bhūtānam* (existing beings), and *jātāni* (born beings), all these generally mean animals in the widest sense including man, as opposed to plants and inanimate things. But the words *pāna* in rock edict I. and *jīva* in the pillar edict V. seem to be restricted by the context to lower animals only; while the words *bhūtānaṁ* in the rock edict VI, and *prāṇa* in the rock edict XIII. and pillar edict IV. are restricted apparently to man only. *Pasu* has been used to mean beasts, as contrasted with *munisa*, man. It may have also the special meaning of cattle, as given in the later vedic literature such as Śatapathabrāhmaṇa (vi. 2. 1. 2, 4).

Class names.

From the pillar edicts the following classes of animals have been named :—

Dupada-catupadesu pakhi-vālicalesu (Ds. ii. 12-13, A. ii. 6, R. ii. 8, Mat. ii. 9-10, Rām. ii. 7),° *vālicale* (Dm. ii. 5).

Catupade (Ds. v. 7, A. v. 22, R. v. 4, Mat. v. 5, Dm. eff.).

Macche (Ds. v. 13, Dm. v. 6, R. v. 8. Mat. v. 9, A eff.).

II. Animals in Special.

Various animals have been named in the rock edict I. and in the pillar edict V. These two edicts are the well-known *ahiṁsā* orders of the Emperor. Edict No. I. forbade the general destruction of life, both in his own kitchen and in his empire; the pillar edict V. specified a number of animals which should not be killed or cruelly dealt with. Animals, special names.

Let me now examine them in detail. In the rock edict No. I., two animals are named, *viz.*, the peacock and the deer.

(i) The peacock. Peacock.

[*Morā* (G. 11), *majura* (Ś. 3, M. 4-5), *majula* (K. 4), *majūlā* (J. 4, Dh. eff.]

Cf. *mora-piñca* (Kulavagga, v. 23.1); in the Jātakas the common form is *mora*, fem. *mori* (Jāt. 159, ii. 33; 339, iii. 126 491, iv. 336); the other forms are *mayūra* (Jāt. 535, v. 406; 545, vi. 276; 547, vi. 534) and *mayura* (Jāt. 547, vi. 534).

Peacocks are known from the earliest times; *mayūryaḥ* (Ṛg-saṁhitā, 1st maṇḍala, sūkta 191, verse 14), *mayūra-romabhiḥ* (Ṛg-saṁ. iii. 45. 1), *mayūryaḥ* (Ath. saṁ. vii. 56-7), *mayūra*° (Taittīriya-saṁhitā, 5th kāṇḍa, 5th prapāṭhaka, verse 16), *mayūrān* (Vāja-saneya-saṁhitā, 24th adhyāya, verse 23).

At present the peacock is a sacred bird; and its killing is forbidden specially in Rājaputānā. But we see from the edict that in the older days its flesh was a permissible food. Viṣṇu-dharma-sūtra says (Adh. li. 31) :—

Tittiri-kapiñjala-lāvaka-varttikā-mayūra-varjjaṁ-sarvva-pakṣī-māṁs-āçanec-āhorātraṁ.

31. For eating (unawares) the flesh of any bird, excepting the francoline partridge, the kāpiñjala, the (quail called) lāvaka, the peahen, the peacock, (he must fast) for a day and a night. (Jolly's translation, Sacred Books of the East, vii., p. 166). Same in Baudhāyana i. 5. 12. 7.

Śaṅkha quotes a dictum of Yama (xvii. 27) :—

Tittiriñ-ca mayūrañ-ca lāvakañ-ca kapiñjaraṁ.
Vāddhriṇasaṁ varttaka-ñ-ca bhakṣyān-āha Yamaḥ sadā.

Transl.—" Yama says :—the partridge, the peacock, the (quail called) lāvaka, the kapiñjara, the (crane called) vāddhriṇasa, and the varttaka are always eatable."

Gradually the idea changed; and in the other Dharma-sūtras, the killing of a peacock involved a penance, though of a small nature (Manu xi. 136, Āpast. i. 9. 25. 13. Yājñ. iii. 272; Baudh. i. 10, 19, 6). The Mahābhārata also specially prohibited the eating of its flesh (Anuśās. P. civ. 93). At present its connection with the ancestry of many royal families has made its killing prohibitive and dangerous.

It is interesting to note what the older medical writers, Caraka and Suśruta, said about the peacock. It belonged to the class *viṣkira* (Çaraka, Sūtra-sthāna, Adh.

xxvii. 46 ; Suśruta, sūtrasthāna, Adh xlvi). According to Suśruta, the flesh of peacock should always be taken (Kalpasthāna, i). Its medicinal properties are thus described :—

Mayūraḥ svara-medh-āgni-dṛk-śrotr-endriya-dārḍhya-kṛt.
Snigdh-oṣṇo-nilahā vṛīṣyaḥ sveda-svara-val-āvahaḥ.—(Suś. Sūtra. xlvi.)

Transl.—(The flesh of) a peacock strengthens voice, mental vigour, appetite, and the organs of hearing and seeing ; (it is) oily, hot, remover of winds, productive of sexual vigour, and an increaser of perspiration, voice, and strength.

According to Caraka, sūtra. xxvii. 62 :—

Darśana-śrotra-medh-āgni-vayo-varṇ-svar-āyuṣāṁ.
Barhī hitatamo balyo vātaghno māṁsa-śukralaḥ.

Transl.—The (flesh of) peacock is most beneficial for the sight, the hearing, the mental power, the appetite, the age, the colour, the voice and the life; is strengthener, allays winds, and produces flesh and semen.

The eggs of peacocks are good in (the disease of) scanty semen, in coughs, heart-diseases and ulcers, are sweet, heavy to digest (*avapākī*) and quick-strengthener (Caraka. Sūtra°, xxvii. 81-2).

The flesh of peacock should not be burnt in the fire of *eraṇḍa* (castor) fuel or taken with castor oil (Caraka, Sūt. xxvi. 120). The flesh is an ingredient of the *vṛṣya-rasa*, an aphrodisiac (Car. Cikit. ii. 42-3) ; and is prescribed as diet in fever (ib. iii. 188), in *rakta-pitta* or bile-blood (ib. iv. 48), in consumption (ib. viii. 154), in piles (ib. ix. 207), in the aftereffects of intoxication, *mad-ātyaya* (ib. xii. 121), in jaundice (ib. xx. 124), in hiccup (ib. xxi. 90), in vomit (ib. xxiii. 21), and in head-disease (ib. xxvi. 146); is to be applied to the head when there bitten by a snake (ib. xxv. 180), and forms an ingredient of medicines for injection (Car. Siddhi., xii. 39, 41). Suśruta advises that in the peacock-flesh should be given sugar, *ativiṣa* (mod. *ātaica*) and *mahauṣadha* (mod. śunthi) (Kalpa. i.); and he prescribes peacock flesh-soup with light foods (Cikitsita. xxxix.), and in fever (Uttara-tantra, xxxix). The peacock-egg is an ingredient of an aphrodisiac (Caraka, Cikits. ii. 147), and of an injection (Car. Sid. xii. 38, 64); the semen is used in an aphrodisiac (Car. Cikits. ii. 59), the liver in poisoning (ib. xxv. 49); the blood for applying to the head when bitten there by a snake (ib. xxv. 180) ; and the leg in medicines for hiccup and asthma (ib. xxi. 114), and for coughs (ib. xxii. 168). Both Caraka and Suśruta recommend that the peacock with other birds should be kept near a person poisoned (Car. Cik. xxv. 249 ; Suś. Kalpa. i).

Deer.

(ii) The Deer.

[*Mago* (G. 11, 12), *mrugo* (D. 3) *mrige* (M. 5), *mige* (K. 9, J. 4, Sh. eff.).]
Cf. Jātakas *miga*.

The sanskrit *mṛga* is found in the earliest vedic literature, Ṛg-saṁ, i. 38. 5, 39. 6, *et seq.*). The spotted, *pṛṣadasva*, fem. *pṛsatī*, was the *vāhana* or car-drawing animal of the Maruts or storm-gods (Ṛg-saṁ. I. 37. 2, 85. 4, 89. 7 *et seq.*). From the contents, the *mṛga* meant there apparently any four-footed game including lion, wolf, &c. In this sense

the *mṛga* was used in works so late as Çaraka-saṁhitā (Sūtra, xxvii. 37, *mṛga-pakṣinaḥ*). Occasionally it was applied specially to deers (Ṛg. i. 38. 5). Gradually the meaning got restricted to four-footed non-carnivorous games, such as *hariṇa*, *eṇa*, *kālaka*, *samvara*, *pṛṣata*, *ruru*, *kadalī*, *kuraṅga*, *citra-piṣṭa*, *kākuli*, and even included according to several writers *sṛmara*, *nyaṇku*, *śarabha*, *śaśa*, and *khaḍgin*. In the Jātakas (Nos. 535, 545 and 547) have been named various kinds of *migas*, viz., *eṇeyya*, *pasadā*, *rohita*, *śarabha*, *sulopi*, *camarī*, *calanī*, *laṁghī*, *kakkaṭākatamāya*, *kālakā*, *pacālakā*, *citrakā*, *dipī*, *kokanisātakā*, *kadalī*, *ruru*, *varāhā*, *sasa*, *kannakā* (535, v. 406; 545, vi. 277; 547, vi. 537, 539).

Of these animals, the best known was the *kālaka* variant *kṛṣṇa* or *kṛṣṇa-sāra mṛga*, the black antelope. It is known from very old times (Ath. saṁ. iv. 4. 7). Its skin was used in numerous sacrifices, specially in the *dīkshā* (Ath. Saṁ. v. 21, 7; xi. 5, 6; Ait. Br. i. 3, 17; śat. br. iii. 2. 1. *et seq.* vi 2. 2. 39). The region where it roamed was considered the eastern boundary of *Āryāvartta* or the Aryan tract (Baudhāyana i. 1. 2. 12; Vasiṣṭha i. 8. 13; 5; Manu ii. 23; Mahābhāṣya i. p. 475; iii. p. 174; Yājñ, i. 2).

The venison has continued to be a permissible food except among those who are rigidly orthodox. The *mṛgas* are classed as *ānūpa* (Car. sūtra. xxvii. 37; Suś. sūtra. xlvi., sub-class *kūlacara*), and *bhūmiśaya* (Car. xxvii. 36), or *jāṅgalā* (Car. xxvii. 52), *janghāla* (Suś. ib.). Suśruta recommends the use of flesh of *pṛṣatas* and *hariṇas* as a general food :—

*Mayūrān nakulān godhā (*n) pṛṣatān hariṇān = api ;*
Satataṁ bhakṣayec-cāpi rasani = steṣām pived = api.—Kalpasthāna, Ch. I.

The medicinal properties of *jaṅghāla* animals are said to be astringent, sweet, light, remover of wind and liver (-humours), pungent, savoury, and clearer of injections (Suś. Sūtra. xlvi). For *bhūmiśaya* flesh in general, see Caraka (xxvii. 54-5).

The horn of the black antelope was prescribed as medicine against hereditary (*kṣetraja*) diseases so far back as in the Atharva-saṁhitā (iii. 7. 1-3). It was a disputed point whether the flesh of the black antelope can be taken (Baudh. Dh. sūt. i. 5. 12. 6). The black antelope's flesh was offered to the Fathers in the *śrāddha* (Manu iii. 269).

The general edict about *ahiṁsā* or non-destruction of life was amplified and specified in the Pillar Edict V. Therein Priyadarśin declared that in the 26th year after his coronation the slaughter of the following born beings was prohibited by him :—

Parrot, starling.

(iii) *Suke* (in all) the parrot.
(iv) *Sālikā* (Ds. 3, A. 20, Dm. eff.), *Sālika* (R. 2, Mat. 2), the starling.

Cf. in the Jātakas, *suvo*, plural *suvā* (484, iv. 277; 530, iv. 430, 432; 547, vi. 421, 539), or *suka* (145, i. 195; 198, ii. 132; 255, ii. 292; 281, ii. 396; 329, iii. 97; 393, iii. 97; 393, iii, 310; 429, iii. 491, *lohitatuṇḍa* 492); *Sālika* (529, v. 110; 547, vi. 421, 539).

The *śuka* is described as *harimāṇaṁ* or yellow in the Ṛg-saṁhitā (i. 50. 12); and the *śuka* and the *śāri* named together in Ath. saṁ. iii. 14, 5; the yellow *śuka* and the *ropaṇākā* (? *śāri*) in ib. i. 22. 4. Both the *śuka* and the *śāri* had been taught to speak like man from very old times (*śāriḥ śvetā puruṣa-vāksarasvate śukaḥ śvetaḥ puruṣa-vāgā*, Taitt. saṁ v. 5.

12; *sarasvatyai śāriḥ puruṣa-vāk...sarasvate śukaḥ puruṣa-vāko*, Vāj. saṁ. xxiv. 33; cf. Maitr. saṁ. iii. 14. 14). The form *śārika* is found in the Vasiṣṭha Dharma-sūtra.

The *śuka* is often taken to be the male of *śārī;* but as Bühler has pointed out, this is a mistake. That the *śārīs* belonged to a different genus was known in India of old, as the following quotation from the Jātakas amply shows (546, vi. 421, verse 33):—

Suvo va suviṁ kāmeyya sāḷika pana sāḷikaṁ.
Suvassa sāḷikāya ca saṁvāso hoti kīdiso ti.

Transl.—The male parrot desires for the she-parrot, and the male starling too for the she-starling. But between a parrot and a starling how can there be a (love-) connexion?

The parrot and the starling are classed in Medical works *pratudas*, i.e., birds that pick up their foods (Caraka Sūtra° xxvii. 50; Suś. Sūtra°, ch. xlvi). The flesh of parrot is said to be astringent, acid, not oily and cooling when cooked, useful in consumption, cough, anæmia and diarrhœa, light and appetiser (Car. ib. 69-70).

Though medicinally included in the diet, the flesh of the parrot and the starling had ceased to be used as ordinary food from a very long time. In the Dharma-sūtras they are not found among permissible meats. On the other hand, Gautama (xvii. 34), Vasiṣṭha (xiv. 48), and Manu (v. 12) distinctly prohibit eating such flesh. It is only by Uśanas that the offering of parrot's flesh is permitted in *śrāddha* (iii. 134); here the other Sūtrakāras speak of (permissible) birds or *śakunas*. Even Uśanas with the other Sūtrakāras prescribe penances for killing parrots and starlings (Manu xi. 135; Viṣṇu l. 38, li. 29; Yājñyavalkya i. 172, iii. 271; Uśanas ix. 10. 25; Samvartta, 145; Parāśara vi. 3, 4; Śaṅkha xvii. 23; Śātātapa ii. 55).

Alune.

(v) *Alune* (in all).

Unidentified. Being named between starling and ruddy goose, it was presumably some kind of bird. The word might be a variant of Sanskrit *aruṇa*, red coloured. In Caraka I find birds with names *rakta-śīrṣaka* red-crested, and *rakta-varttaka*, or red-quail.

Ruddy Goose.

(vi) The ruddy goose or the Brahmani duck or goose, *cascara nutila.*
Cakavāke (in all).
Cf. *cakkavāke*, plural *cakkavākā* (Jāt. 434, iii. 520; 451, iv. 70; 535, v. 406; 545, vi. 276; 547, vi. 539).

The ruddy goose is known from the earliest times for their conjugal love. In Ṛk-saṁhitā (ii. 39, 3) they are compared to Aśvins; in the Atharva-saṁhitā they are considered models of conjugal love. For further references see also Taitt. saṁ. v. 5. 13; Vājasan. saṁ. xxiv. 22, 32; xxv. 8. In the Jātakas one finds *jayaṁ-patike cakkavāke* (451, iv. 70), with mosses as their food, *sevāle khāditvā* (434, iii. 520), and as *nadī-carā* (547, vi. 539).

Cakravākas are placed in the class *vāri-cāriṇaḥ* or *ambu-cāriṇaḥ* (Car. Sūtra. xxvii. 42) and among *saṁghāta-cāriṇaḥ* (Suś. Sūtra, ch. xlvi).

In the time of the Dharma-Sūtras the Brahmani duck had ceased to be among the

permissible foods. The eating of its flesh is specially forbidden (Gautama, xvii. 28; Vasiṣṭha xiv. 48; Manu v. 12; Āpast. i. 5. 17. 35), and involved penances (Viṣṇu, li. 30; Yājñyavalkya, i. 173; Uśanas ix. 25; Śaṅkha xvii, 24). The mere killing of the bird involved penance and offering of gifts (Āpast i. 9. 25. 13; Viṣṇu l. 33; Saṁvartta, 145; Parāśara vi. 2.).

(vii) The goose, *haṁse* (in all, A. eff.). Goose.

Cf. *haṁse* in the Jātakas, plural *haṁsā* (476, iv. 211; 502, iv. 423).

Known from the very earliest times. In Ṛg-saṁhitā they are connected with the twin-gods Aśvins, and are said to separate the soma from water (i. 65. 9. ii. 34. 5, iii. 8. 9, iii. 53. 10, iv. 40. 5, iv. 45. 4; vii. 59. 7). In Ath. saṁ, vi. 12. 1 the night is described as putting to rest all animals except the *haṁsa* bird. They are also named in Taitt. śaṁ. v. 5. 20; and in Vājasan. saṁ. xix. 73, xxiv. 22, 35.

The bird is classed among the *vāri-cāriṇaḥ* (Car. Sūtra, xxvii. 39), and among the *saṁghāta-cāriṇaḥ* (Suś. Sūtra ch. xlvi.). According to both the flesh of the goose is heavy to digest, warm, oily, sweet, strength-giver, good for voice and colour, increases blood and semen-power, and allays the winds (Car. Sūtra, xxvii. 63; Suś. Sūtra, ch. xlvi.). The goose flesh, egg, and semen form ingredients of various aphrodisiacs (Car. Cikitsita, ii. 40, 42, 47, 59); while the flesh is prescribed as diet in consumption (ib. viii. 154) and the semen as medicine in head-disease (*ib.* xxvi. 158).

In the time of the Dharma-Sūtras *haṁsa* flesh had become a forbidden food (Gautama, xvii. 28; Vasiṣṭha, xiv. 48; Manu v. 12; Āpast. i. 5. 17. 35); special penances were laid down for its eating (Viṣṇu, li. 29: Yājñyavalkya, i. 172; Uśanas, ix. 24). The mere killing of the bird involved penances (Manu xi. 136, Viṣṇu l. 33; Yājñyavalkya, iii. 272; Uśanas, ix. 11; Saṁvartta 144; Parāśara vi. 2; Śaṅkha xvii. 23; Āpast. i. 9. 25. 13).

(viii) *Naṁdī-mukhe* (in all). Namdi-mukhe.

Unidentified. I have found it named in the older medical works (*Ārā-nandīmukhī-vāṭī°*, Car. Sūtra. xxvii. 41; *śarārīmukha-nandīmukha-mudgu°*, Suś. Sūtra. ch. xlvi). It is put in the same class with the *cakravāka* and the *haṁsa*, viz., *vāricariṇaḥ* (Caraka) and *saṁghāta-cāriṇaḥ* (Suśruta), and is, therefore, evidently an aquatic bird.

(ix) *Gelāṭe* (in all.) Gelate.

Unidentified. Placed between the *naṁdī-mukha* and the *jātaka*, it seems to have been a bird. It may be a variant of the animal named *golattikā* (Taitt. saṁ. v. 5. 16; Vājasan. saṁ, xxiv. 37).

(x) The bat. Bat.

Jatūkā (Ds. 4), *°ke ?°kā* (A. 21; Dm. eff.) *°ka* (R. 2, Mat. 3).

Jatu is mentioned in Ath. saṁ ix. 2, 22; Vāj.-saṁ xxiv. 25, 36; Mahābhāṣya under Pān. iv. 1. 71. In the Amarakoṣa *Jatuka* (var. *°kā*) is given another synonym *ajina-patra* or skin-winged (ii. 5. 26).

Dr. Bühler takes it to be the flying-fox (Bengali *cāmcikā*), but it would be more properly the bat (Bengali *bāduạ*). The flesh of flying-fox is not taken in Eastern India on account of its disagreeable smell. But bat's flesh is eaten by the *pāsis*, the *kelās* and other lower classes.

White-ant.

(xi) The white-ant queen.

Ambā-kapīlikā (Ds. 4), °*kapilikā* (A. 21 ; Dm. eff.), °*Kapilika* (R. 3 ; Mat. 3).

Cf. in the Jātakas *kipillikāni*, (Jāt. 490, iv. 331 ; 514, v. 39) ; *Kipillika*, *kipillaka* (120, i. 439 ; 407, iii. 370) and also *pipīlikā* (386, iii. 276, 277).

This name has been hitherto a stumbling-block. But Bühler is right in his guess that it refers to the queen-ant.

Sušruta divides the *pipīlikās* (ants) into six classes (kalpasthāna ch. viii). *viz.*, *sthūla-śirṣā*, *saṁvāhikā*, *Brāhmaṇikā*, *Aṅgulikā*, *kapilikā* and *citra-varṇā*. Further definition of it as white-ant is to be found in Jātaka 490, iv. 331, verse 11, where the bear is asked about his food ' the ants in the ant-hills ' (*vammīka thupasmini kipillikāni*), *cf.* also *tamba-kipillkāni* (514, v. 39) ; *kuntha-kipillika-matte* (120, i. 439) ; *kipillaka-puta-paṭicchannaṁ* (407, iii. 370).

The ants in general are known from the very earliest times, *pipīla* in Ṛk-saṁ. x. 16. 6, *pipīlikā* and *upajīkā* (Ath. sam. ii. 3. 4 vi. 100 vii. 56. 7, xx. 135. 3). Ants are mentioned in various other Vedic works, *e.g.*, in Śatapatha-brāhmaṇa (xiv. 4, 2, 9, 29), Pañcaviṁsa-brāhmaṇa (v. 6, 10, xv. 17, 8), Tāṇḍya-brāhmaṇa, Cāṅkhāy. Çr. śūtra (xii. 23, 10), Lāṭy. Çr. sū. (iv. 7, 1), Kauš. sūtra (xi. 93, 116), Nirutka (vii. 13), Ṛg-Prātišākhya (xvi. 24, xxvii. 35).

In Kauśika-sūtra, the mud of the ant-hill is prescribed as charm (xxv. 7, xxvi. 43, xxxi. 26, xxxii. 6) ; for its use in sacrifices, cf. also Śatap. br. vi. 3, 3-5, xlv. 1, 2, 10.

Female tortoise.

(xii) The female tortoise.

Daḍī (Ds. 4 ; s. 21), *duḍī* (R. 3, Mat. 3).

Duḍī has been defined by Rāyamukuṭa, and in Medinī and Hārāvalī as a small tortoise. Bühler accordingly takes it to be the terrapin of the Indian gardens. But really it means the female tortoise (*kacchupī dulī*, Hemchandra 1353; *kacchapasya ḍulī*, Mahābhāṣya vol. iii. p. 152 ; *kamathī ḍuliḥ*, Amarkośa i. 10, 24.

Boneless Fish.

(xiii) The boneless fish

Anaṭhika-macche (in all).

According to both Senart and Bühler the boneless fish probably means prawn. This is doubtful. It probably refers to a group of fish.

For *anaṭhika*, cf. *anasthāntu* (Manu xi. 141 ; Yājñ. iii. 269), *anasthimatā* (Gautama xxii. 21), *anasthin* (samvartta 148).

Veda-veyake.

(xiv) *veda-veyake* (in all).

Unidentified. From its position in the context it is very likely an aquatic animal. Is it

a compound of two words, like *kaphaṭa-sayake* lower down? In Vasiṣṭha-saṁhitā one *veha* is found in the list of the forbidden animals (*Veha-gavaya-śiśumāra-nakra-kulira* xiv. 41).

(xv) *Gaṁga-puputake* (Ds. 5, R. 3, Mat. 4) °*take* (A. 21; Dm. eff.). Gaṁga-puputake.

Unidentified. From its place in the context and from the reference to the *Gaṅgā* river, it seems to be an aquatic animal. Similar expressions are *Gaṅgāteya* (prawn or shrimp) in the Hārāvali, and *Gāṅgeya* (Hilsa fish).

(xvi) The skate fish. Skate-fish.
Saṁkuja-macche (in all).

The word means literally fish that can contract or withdraw themselves in. Accordingly both Senart and Bühler take it to be the skate. Cf. *sāṇkuci* in the Bhoja-prabandha.

(xvii and xviii) the tortoise—porcupine. Tortoise—Porcupine.
Kaphaṭa-sayake (DS. 3, A.?), *eseyake* (R. 3, Mat. 4).

A compound, of which the Sanskrit equivalent is *kamaṭha-śalyakan.*

I have not been able to find out *kamaṭha* in the vedic literature. Its other synonyms *kūrma* and *kacchapa* are mentioned. Kūrma is the usual word (Ath. saṁ. ix. 4. 16; Taitt, saṁ. ii. 6. 3, v. 2. 8; Vāj. saṁ. xiii. 31, xxiv. 34, xxv. 3; Ait. br. viii. 21. 10; frequently in Śat. br. i. 6. 2. 3, vi. 1. 12. 2.30, vii. 5, 1. 1, 5. x. 4. 3. 14; Kāty. Śv. sū. xvii. 4. 27, 9. 4). Yāska defines *kacchapa* thus :—*kacchapaḥ kacchaṁ pāti kacchena pātī-ti vā kacchena pivat-iti* (Nirukta, iv. 18).

The *kūrma* is placed by Caraka among the *vāri-śayāḥ* (Sūtra° xxvii. 38), and by Suśruta among the *pādinaḥ* (Sūtra° Ch. xlvi). According to Caraka, the flesh of tortoise is allayer of winds, vigour-giver, strengthener of the eyes, the memory and the comprehension, good (as diet) and useful in consumption (Sūtra° xxvii. 78; cf. Suś. Sūtra, Ch. xlvi). The tortoise-flesh is prescribed in piles (Caraka, Cikitsā. ix. 126), and in dysentery (*ib.* x. 41), and as useful for persons injected (*ib.* Siddhi. xii. 44).

Salyaka or porcupine was known from the earliest times (Ath. saṁ v. 13, 9, Vāj. saṁ. xxiv. 35). The quills of porcupines were used in certain ceremonies (Śat. br. ii. 6. 4. 5, Sāṅkh. Śr. *sū.* xvi. 28, 4).

Śalyaka (*v.l.*, *sallaka*) came under the class *bhūmi-śayāḥ* in Caraka-saṁhitā (Sūtra. xxvii. 36), and by Suśruta under *vileśayāḥ* (Sūtra. Ch. xlvi). According to Caraka, the porcupine flesh is sweet, on cooking pungent, destroyer of wind, liver and cough (-humours), removes cough and (hard) breathing (Sūtra. xxvii. 74; *cf.* Suś. Sūtra. Ch. lxvi). Its flesh is prescribed in piles (Car. Cikitsita. ix. 126), and its blood and skin in asthma (ib. xi. 109, 114).

Both the tortoise and porcupine came under the great class of *pañca-nakhāḥ* or five-toed animals. The flesh of all the five-toed animals (except five or six) had been forbidden before the second century B.C. In the Mahābhāṣya, Vol. I., p. 5 (I. 1. 1), is quoted the dictum *pañca pañca-nakhā bhakṣyā*, and then follows a discussion leading to the inference that the other five-toed animals are not eatable. See also the Mahābhārata.

The five allowed in the old days included the tortoise and the porcupine (Viṣ. li. 6; Yājñya. I. 117; Gaut. xvii. 27; Vas. xiv. 39; Manu v. 18; Āpastamba I. 5. 17. 37; Baudh. I. 5. 12.5). The tortoise flesh was prescribed in the *Śrāddha*, as specially acceptable to the Fathers (Viṣ. lxxx. 11, xv. 1-15; Gaut. xv. 15; Manu iii. 270). Gradually the idea changed and the later Dharma-sūtras laid down a small penance. Śaṅkha quoting the text about their permissibility lays down the penance (xvii.22); but the others entirely ignore the old dictum (Parāśara vi. 10, Uśanas ix. 24).

Squirrel. (xix) *Paṁnaśaśe* (in all).
Sansk. *parṇa-śaśa.*

Following the analogy of *parṇa-mṛga*, Bühler has identified this animal with the large white-bellied red squirrel.

Srmara. (xx) *Simale* (in all).

Sansk. *sṛmara.* Known from very early times (Taitt. saṁ. v. 5. 16; Vāj. saṁ. xxiv. 36). It belonged, according to Caraka, to the class *ānūpa* (Sūtra xxvii. 37), and according to Suśruta, to the same class, sub-class *kūla-cara* (Sūtra°, Ch. xlvi). Suśruta says the flesh of *sṛmara* is astringent following sweetness, allayer of wind and liver (-humours) and an increaser of semen (Sūtra°, Ch. xlvi). Caraka speaks only generally about the flesh of the *ānūpas* (Sūtra° xxvii. 65).

The eating of *Sṛmara* flesh is not permitted in any of the Dharmasūtras.

Bull. (xxi) The bull.
Saṁḍake (in all).

This is defined as a bull set free. But in the Dharma-and Gṛhya-sūtras a bull set free is called *utsṛṣṭa vṛṣa*, and the ceremony *vṛs-otsarga* (Viṣ. lxxxvi; Pāraskara Gr. sū. iii. 9; Śāṅkh. Gr. sū. iii. 11; *cf.* Manu viii. 242; Yājñ. ii. 163; Atri 55).

Okapiṁḍe. (xxii) *Okapiṁḍe* (in all, eff. in A.);
Cf. *ukkapiṇḍe* in the Mahāvagga, vi. 33, 5.

Bühler thinks that the word refers to the *godhās* or the large lizards. Doubtful. *Godhās* are known from very early times (Ṛg. x. 28. 10), and was one of the five-toed animals permitted to be eaten by the older Dharma-sūtrakārs.

Rhinoceros. (xxiii) The rhinoceros.
alasate (in all, eff. in A.).
Cf. the Jātakas, *palāsadā*, *palāsajā*, *pallasadā*, *palasatā* (535, v. 406, verse 76; 545, vi. 277, verse 67), its commentary—*balasatā.*

Bühler has rightly identified it with the rhinoceros. Buddhaghosa in his commentary to the Jātakas distinctly says so; *P° ti khagga* (v. 406, line 30), *P° ti khagga-migā* (vi. 277, line 27).

The *Khaḍga* is mentioned in older vedic literature such as Maitrāyani-saṁhitā iii. 14. 21; Vāja. saṁ. xxiv. 40; Śān. Śr. sū. xiv. 33, 20 (*khaṅga*).

The rhinoceros was placed in the class *Anūpa* (Car. Sūtra° xxvii. 37; subclass *kula-carāḥ*, Suś. Ch. xlvi.). Its flesh is said to be a destroyer of cough, astringent, remover of winds, good for liver, pure, life-prolonger, restrainer of urine and keeper (of health ?) Suś. Ch. xlvi.). Cf. Caraka, Sūtra° xxvii. 65, for a general description of the flesh of the *Ānūpa* animals. Its flesh is prescribed in consumption (ib. Cikitsita° viii. 150), and its dung mixed with other animal's dung prescribed for vomit (ib. Kalpa° iv. 9).

By the older Dharma-sūtrakārs, the flesh of the rhinoceros was permitted to be eaten, though one of the five-toed animals (Viṣ li. 6, *cf.* xxiii. 44; Yājñ. i. 177; Gaut. xvii. 27; Manu. v. 18; Āpast. i. 5. 17. 37).

Its flesh, if offered in the *śrāddha*, was deemed to give special pleasures to the Fathers (Gaut. xv. 15; Manu iii. 272; Yama quoted in Śaṅkha xiii. 25; Yājñ. i. 260; Uśan. ii. 138; Mahābh. Anuśās. P., lxxxviii. 10; Āpast. ii. 7. 17. 1). Gradually, however, the feelings changed. In the time of Vasiṣṭha and Baudhāyana, its permissibility as a food was a disputed point (xiv. 47; i. 5. 12. 5); Śaṅkha though it quoted Yama's dictum laid down a penance for its killing (xvii. 22); and Parāśara ignoring the previous dicta similarly laid down a penance for its slaughter (vi. 107).

(xxiv) The pigeons. **Pigeons.**

Seta kapote, gāma kapote (in all).

In the Jātakas the word *kapota* is used, but the more common form is *pārāpata* (42, i. 242; 274, ii. 361; 277, ii. 382; 375, iii. 225; 395, iii. 314).

Kapota is known from the very earliest times (Ṛg-saṁ. x. 165, 1. 5); and the pigeon is described as the messenger of the god of destruction (Ath. saṁ. vi. 27. 1; 3, vi. 29. 1, 2); *cf.* also Taitt. saṁ. v. 5. 18; Vāj. sam. xxiv. 23, 38; Śat. Br. xi. 7. 3. 2.

Both *kapota* and *pārāvata* are put under the class *pratuda* (Car. sūtra° xxvii. 50-1, Suś. Sūtra° Ch. xlvi). Caraka draws a distinction between the village (domesticated ?) pigeons and forest (wild ?) pigeons, and says that the flesh of the village pigeon is astringent, sweet, cool, good for blood and liver, and sweet (to eat) when cooked; while the flesh of the forest pigeon is said to be somewhat lighter, cool, constipating and gentle (in action) Sūtra° xxvii. 67-69). According to Suśruta, the flesh of the *pārāvata* allays bloody liver, soft, sweet on cooking and heavy to digest (Ch. xlvi). In *rakta-pitta* (blood-liver) the flesh of both *kapota* and *pārāvata* is prescribed as diet (Car. Cikitsi. iv. 39, 45), and that of *pārāvata* in excessive thirst-disease (ib. xxiv. 27); while its use is forbidden in jaundice (ib. xx. 78, 82). The Mahābhārata recommends the keeping at home of pigeons, with parrots and starlings (Anuśās. P. civ. 114).

The eating of pigeon's flesh has not been permitted in any of the Dharma-sūtras, old or late. Its eating involved penance (Vas. xxiii. 30). But that it was eaten in the old days is evident from the Jātakas (277, ii. 382; 375, iii. 225; 395, iii. 314).

(xxv-xxvii) The goat, the sheep, and the pig. **Goat, Sheep, Pig.**

(*a*) *Ajakā, ajake* (in all).

Cf. aja, ajikam (Jātaka 386, iii. 278).

(*b*) *Eḍakā, eḍake* (in all).

Cf. eḷaka-pādaka,° Kulavagga vi. 2. 4 ; and in the Jātakas, *eḷaka* (8, i. 166 ; 437, iii. 532), *eḷikā* (426, iii. 480 ; 481 ; 437, iii. 533), *aj-eḷakā-dayo* (347, iii. 146).

(*c*) *Sukalī*, *sukale* (in all).

Cf. sūkara° in Mahāparinibbāna-sūtra ; and in the Jātakas *sūkaraṁ*, and *sūkarī* (283, ii. 409 ; 388, iii. 286 ; 492, iv. 350).

Of the above, Piyadasi prohibited the killing of such females which were pregnant or giving milk.

The goat, the ram, and the hog as boar can be traced to the earliest times known. The car of the god Pūsan was drawn by goats ; for *varāha* see Ṛk. saṁ. i. 114. 5 ; viii. 77. 10 ; for *sūkara*, see Vāj. saṁ. xxiv. 40.

The goat's flesh has continued to be taken to date. The mutton is not in favour, though not denounced in N. India. The pork has entirely ceased to be eaten except among the lowest classes. It was not so in the older days. Buddha's last illness (Ṛg.-saṁ. vi. 55. 3, 4, 16) (diarrhœa) is said to have been caused by eating dried boar's flesh, *sūkara-maddaraṁ* (Mahāparin. sūtra, J.R.A.S. viii. p. 231). For further evidence as to its eating see the Jātakas 30, i. 197 ; 283, ii. 406 ; 286, ii. 419. Gradually, as in the case of many other animals, the ideas of the higher classes changed. In Vasiṣṭha's time (xiv. 47) the eating of the flesh of the pig (*grāmya śūkara*) came to be a disputed point, *i.e.*, allowed by some and forbidden by others. Traces of its eating still remained in the *Śraddhas* when *varāha* flesh was recommended for the Fathers (Gaut. xv. 15 ; Manu. iii. 270 ; Yājñ. i. 259 ; Uśanas iii. 136 ; Mahābh. Anuś. P. lxxxviii. 6). But its general eating was forbidden (Baudh. i. 5. 12. 3 ; Gaut. xvii. 29 ; Āpast. i. 5. 17. 29 ; Manu. v. 19 ; Mahābhāṣya i. 1, 1. p. 5, l. 18, *abhakṣyo grāmya-śūkaraḥ*) and involved a penance (Gaut. xxiii. 5 ; Manu. xi. 157 ; Śaṅkha ix. 27 ; Vasiṣṭha xxiii. 30). The intentional killing of a *varāha* necessitated a penance (Gaut. xxii. 24 ; Manu. xi. 135 ; Viṣ. l. 36 ; Yājñ. iii. 273 ; Uśanas ix. 10 ; Saṁvartta 142 ; Parāśara vi. 13 ; Śaṅkha xvii. 20).

The *varāha* is put in the class *Ānūpa* (Śar. Sūtra° xxvii. 37 ; sub-class *kūla-cara*, Suśr. Sūtra° Ch. xlvi.) The flesh of boar is cooling, maker of blood, increaser of semen, remover of fatigue and wind (-humour), strengthener, palatable, causer of perspiration, and heavy to eat (Car. Sūtra° xxvii. 77-8 ; cf. Suś. ch. xlvi).

Fowl.

(xxviii) The fowl.

vadhi-kukuṭe (in all, A. eff.).

Cf. *kukkuṭa*, Jâtakas 19, i. 436 ; 50, i. 259 ; 284, ii. 441 ; et seq., *Kukkuhā* (535, v. 406 ; 545, vi. 276).

The fowl is known from early times (Vāj. saṁ. i. 16 ; Śat. br. i. 1. 4. 18). It is classed under *viṣkira* (Car. Sūtra° xxvii. 45 ; Suś. Sūtra. Ch. xlvi). The flesh of the wild cock is said to increase blood, and to cure wind-disease, anæmia, vomiting, and irregular chronic fever. The village (domesticated?) cock's flesh has similar effects but is heavier to digest (Suś. Sūtra° Ch. xlvi ; cf. Car. Sūtra° xxvii. 64).

That the fowl was eaten in old days is evident from the Jātakas (383, iii. 365 ; 445, iv. 39 ; 447, iv. 56), but it is not permitted in any of the existing Dharma-sūtras. Its eating

is specially prohibited in Vasiṣṭha xiv. 48; Mahābhāṣya i. 1, 1, p. 5, l. 18; Gaut. xiv. 29; Āpast. i. 5. 17. 32; Manu v. 12, 19; Yājñ. i. 173. Furthermore such an eating involved penance (Gaut. xxiii. 5; Vas. xxiii. 30; Śaṅkha xvii. 21; Parāśara vi. 2; Saṁvartta 146; Uśanas iv. 30; Manu xi. 157).

Vadhi, Sans. *vadhri* is a vedic word found in Ṛg-saṁhitā meaning castrated.

(xxix) The elephant. Elephant.

(*a*) *Nāga-vanasi* (in all, A. eff.).

(*b*) *Hasti-dasanā* (G. iv. 3), *hastino* (Ś. iv. 8.) *hastine* (M. iv. 13), *hathini* (K. iv. 10), *hathīni* (Dh. iv. 13; J. eff.).

Cf. in the Jātakas, *nāga*, *hatthi*. For (*a*) *cf. nāga-vaneṣu* in Viṣ. iii. 16.

The elephant is known from the very earliest times as a *mṛga* with hands (*mṛgāḥ hastinaḥ*, Ṛg-saṁ. i. 64. 7; Ath. saṁ. xii. 1. 25). For other references see Ath. saṁ. x. 1, 32; vi. 38. 2; vi. 70. 2; ix. 3. 17 (she-elephant). In the Śat. br. iii. 1. 3. 4 the elephant is said to have been formed by cutting off a lump from the unformed body of Mārtāṇḍa, the eighth son of Aditi.

(xxx) The cow and the ox. Cow. Ox.

Gone, *gono*, *gonasa* (in all, A. eff.). (*-nīlakhitaviye*).

Cf. Jātakas, *goṇo* (28, i. 191; 211, ii. 165, et seq.)

goṇā (1. i. 98), fem. *gāvo* (349, iii. 149).

Both the ox and the cow are known in the Rk.-saṁhitā. The car of the goddess Dawn was drawn by oxen (Ṛg.-saṁ. i. 92. 2; v. 80. 3). Their marking, which is regulated in Piyadasi's inscription, is an old custom, described in the sūtra literature (Viṣ. Ch. lxxxvi; Pāraskara. Gr. sū. iii. 10; Sāṅkhyāna Gr. sū. iii. 10; Āśvalāyana Gr. pariśiṣṭa iii. 18). The ox was marked with a discus (*cakra*) on the left and a trident (*triśula*) on the right (Pāraskara). The most auspicious time for marking varied in different works—Kārttika Purṇimā or the star Revatī in the month Aśvayuja (Pāraskara); Kārttika or Aśvayuja (full-moon, according to Jolly's translation, Viṣṇu); Kārttika or Vaiśākha Purṇimā or Revatī in Aśvayuja (Āśv. Gr. par.); the new-moon after Phālguṇa full-moon under the star Revatī (Śāṅkh.).

The Sanskrit word for marking is *aṅkayati*, *aṅkita*.

Curiously enough, the pillar edict is silent about the killing of the cow and the ox. In the Ṛk-saṁhitā the kine were freely offered in sacrifice and used as food (i. 61. 12; v. 52. 17; vi. 16. 47; vi. 28. 4; vi. 39. 1; x. 28. 3). In the Ait. Obr. ii. 1. 8 the man, the horse, the ox, the sheep, the goat, are declared to be *medhya* or fit for sacrifice. Traces of this sacrifice and eating survived so late as the Jātakas (145, i. 494; 199, ii. 135; 438, iii. 538); and are recognisable in the offering of beef to the Fathers in the *Srāddhas* (Āpast ii. 7. 16. 26), and in the offering of an ox to the guest in the Gṛhya-sūtras (Śāṅ. ii. 15. 1; Aśv. i. 24, 30-1; Pārask, i. 3. 26, 7; Khādira iv. 4, 17-20; Gobhila iv. 10. 18-22; Hiraṇyakeśin i. 4. 13, 10-13; Āpastamba, v. 13, 15-16); *cf.* śat. br. iii. 4. 1. 2. For various reasons, chiefly for her high usefulness, the ideas about cowkilling

changed until one finds in the Śatapatha-brāhmaṇa "harm not the inexhaustible wide-ruling cow" (vii. 5. 2. 19), with the dictum that the Adhvaryu should not eat the flesh of either the cow or the ox (ib. iii. 1. 2. 21); and the beef-eater is said to be born again as a man of art fame (ib., iii. 1. 2. 21). In the *Pamśa-medha yajna* the cow-killer is dedicated to death. (Vāj. saṁ. xxx. 18; *cf.* Taitt. br. iii. 4. 1. 16. See also the oldest Dharma-sūtra (Gaut. xvii. 30). The cow (not ox) has been venerated from the oldest times. The cow as goddess Aditi should not be killed (*e.g.*, saṁ. viii. 101. 15); and her worship is recognised (Ath. saṁ xii. 4. 5).

Horse.

(xxxi). The horse.
Asvasā lakhane (in all, A. eff.).
Cf. *assa* in the Jātakas.

The horse is known from the very earliest times. It was the *vāhana* of the cars of various gods such as varuṇa (Ṛg.-sāṁ. v. 62. 4) sūrya ('seven mares,' ib. 1. 50. 9) Aśvīns (ib. I. 117. 2), Indra (ib. ii. 18. 4 *hari*), vāya (*niyut*, (ib. iv. 4b. 3, iv. 48. 4), Agni (*rohita*, ib. iv. 2. 3), soma ('mares,' ib. ix. 86. 37). Ṛbhus (ib. vii. 48. 1). The *aśva* was a generic term applied not only to horse, but to other animal-carriers, *e.g.*, *ajāsva* or goats (Ṛg. vi. 55. 4), *pṛsadaśa* or spotted deer (ib. 1. 89. 7). The horse-flesh was taken roasted and boiled (ib. v. 162. 11, 13).

The marking of horses, I suppose, is included in the Gṛhya-sūtra references quoted above under the cow. The Áín 55 in the Áín-i-Akbari describes how the horses were branded when received into or issued from the imperial stables (Blochmann I. 139-40).

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SOME CURRENT PERSIAN TALES

BY

LIEUT.-COLONEL D. C. PHILLOTT,

Secretary to the Board of Examiners.

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Some current Persian Tales, collected in the South of Persia from Professional Story-tellers.

By Lieut.-Colonel D. C. Phillott, *Secretary to the Board of Examiners.*

[Read June 6th, 1906.]

INTRODUCTORY NOTE.

The Persians, like the Arabs, are passionately fond of listening to story-tellers. Their stories are highly dramatic, and, though often adorned by fine quotations from their most esteemed writers, generally contain many passages that are, according to English ideas, indecent or immoral. The favourite topic is the wickedness of women. That women though "deficient in sense" excel in cunning, is a Muslim axiom. There is a tradition that the Prophet said, "I will stand at Hell's door and the most that enter there will be women."[1] It is but fair to state that the stories of the depravity of women have been composed by men. Arab women say كيد الرجال اشد من كيد النساء "The cunning of men is greater than the cunning of women," a sentiment fully endorsed by their Persian sisters.

The following typical stories have been selected from a number, on account of the simplicity of their language and their many modern colloquialisms. They were taken down in writing by a Persian with considerable difficulty, just as they fell from the lips of their professional narrators. Persian story-tellers speak with great fluency and rapidity; they cannot dictate slowly: if interrupted they miss the point and become incoherent.[2] Hence the same story has to be repeated many times before the recorder can accurately fill in all the numerous blanks that occur after a first narration.

The story of the philopena, the first story in this collection, is identical with one of the stories in the celebrated Turkish romance of the *Qirq Vezīr*, translated into English by the late E. J. W. Gibb.

The following note on professional story-tellers has been furnished me by Mr. Azoo, Arabic Instructor to the Board of Examiners:—

"It would not be inaccurate to say that the professional story-teller is a real educating agent in countries not blessed with a cheap press, where education is in a backward

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[1] *Vide* Mathews' "*Mishkat-ul-Masábih*," Vol. II, Chapter XXII.

[2] Dr. N. Annandale tells me he met with a similar difficulty when attempting to photograph some actors. To quote his own words:—

"In photographing actors and actresses (both Malay and Siamese) in Lower Siam, I found it impossible to persuade them to pose in dramatic attitudes or to break off their acting at the wrong moment. Every 'piece' formed an organic whole in their idea of it, especially as regards gestures and orchestral accompaniment, and to a less degree as regards words, "gags" being frequently introduced. It was impossible for them to treat each incident or situation by itself, and even if they could be persuaded to stop before a proper pause had been reached, they were obliged to begin again from the beginning, and were quite unable to proceed from the point at which the break had occurred. Among the Malays, however, dramatic performances all partake of a magical nature and generally commence with a long invocation of the Earth Spirits. The Patani people believe that professional story-tellers, who are generally women, are directly inspired by passing spirits, which "dive into them." *Vide* also note on p. 33, *Fasciculi Malayenses*, Anthropology, Part II (*a*).

state. He performs, to a large extent, the double functions of novelist and dramatist; indeed, from his more ready access to the poorer classes, he may be said to come nearer to the schoolmaster. Moving about from town to town, and from country to country, he contributes in no small degree to the diffusion of education and to the growth of intelligence resulting therefrom; and from his ample stock of choice phrases and expressions, to a greater flow of language in the peoples who have the benefit of his services. Hence the almost marvellous fluency of tongue and nimbleness of wit of the Persians as a nation; for the professional story-teller has his headquarters in Persia.[1] In Egypt, too, he has his vogue. There he is known under different names, from the subject of the story which he makes his forte.[2] The prime object of the story-teller is, no doubt, the diversion and intellectual amusement of the people; but astute politicians did not fail to turn him to their purposes. The first, and still the greatest romance in the Arabic language, the "Romance of 'Antar," was, we are told, written at the instigation of the Caliph, to divert the attention of the populace from affairs of state."

——o——

I.

THE STORY OF THE PHILOPENA.[3]

There was in Bandar-i 'Abbāṣ a wise merchant, who had one son named Khwāja Ibrāhīm, an inexperienced lusty youth much inclined to the society of ladies. Now this youth had composed a book on the wiles of the women of 'Abbāṣī [4] and was anxious to extend and complete this work. Accordingly he said to his father one day, "Father, I want to see the world; I want to go to Kirmān." [5] His father replied, "My son, go not to Kirmān, for Kirmān possesses women so tricky that they can steal away the

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1 In Persia, a story-teller is called a '*Qiṣṣa-Khwān* or *Naqqāl*; in Turkish Arabia *Qiṣṣa Khwūn*. In Baghdād he is paid by the keeper of the coffee-shop. He is generally of the class of dervishes. Sir John Malcolm, in his admirable "History of Persia," gives a vivid description of these narrators of stories and reciters of verses. We cannot do better than quote his own words when he speaks of the great skill sometimes attained by the masters of this art. "They sometimes display so extraordinary a skill," he says, "and such varied powers, that we can hardly believe, while we look on their altered countenances and listen to their changed tones, that it is the same person, who at one moment tells a plain narrative in his natural voice, then speaks in the hoarse and angry tone of offended authority, and next subdues the passions he has excited by the softest sounds of feminine tenderness."

It remains to be added that the Derveish Seffer of whom he speaks is in all probability the same person who is mentioned in Morier's *Ḥājī Bābā*.

2 Thus '*Antarī* is one whose chief stories are based on the romance of 'Antar. *Muḥaddith* is one who tells stories generally.

3 In the Persian or rather the Eastern philopena, the merry thought of a bird is broken at a meal by the two players, as a sign that the bargain is concluded. [Boys sometimes break a stick or tear a piece of paper when a merry thought is not at hand.] After this the first player that receives any article whatever from the hand of the other, has to pay the forfeit. The winner, as soon as the article is taken, must say, *Marā yād ast turā farāmūsh*, "I remember, thou hast forgotten"; or simply *Yād ast*, "It is remembered."

In Persia this kind of philopena is called a *janāgh shikastan*, "breaking the merry thought"; but in Baghdad and probably in some parts of Persia a *yād ast* "it is remembered."

4 'Abbāṣī: m.c. for Bandar-i 'Abbāṣ.

5 The women of Kirmān are noted for their immorality. Local tradition says that the Afghans once mounted their bullocks and buffaloes and came down on the city and captured the women. The men of Kirmān petitioned the Afghan chief, and the women were restored. They had, however, become hopelessly corrupted, and the tricks and looseness of morals acquired during a short sojourn in the Afghan camp have been perpetuated in the daughters.

yolk of an egg from amidst the white." The son replied, "Don't be alarmed, father, but make the arrangements for my journey."

The father made the arrangements. There were present four experienced merchants; so placing his son's hand in theirs he said, "Never get separated for a moment from my son, especially in Kirmān, for that city possesses women full of wile." They replied, "Set your mind at rest." So they took their goods and departed from 'Abbāṣī and in time reached the city of Kirmān. On the march Khwāja Ibrāhīm went nowhere without informing his companions, nor was he ever allowed to go anywhere alone. After unloading their goods in the caravansera of Kirmān they went to the bath. Here we will leave them, while I say a few words about the wife of Khwāja Sa'īd, a merchant.

The evening previous to this the lady was dining with her husband, when lifting up a merry thought from the dish and turning to her husband she said, "Let us have a philopena—the forfeit what you please" (*i.e.*, anything the loser may choose). Her husband agreed, and they broke the merry thought.

In the morning the husband rose and went off to his office in the caravansera. The lady gazed fixedly at her heel [1] while thousands of wiles taught her by her mother came into her head, for said she, "I must to-day win this philopena." Veiling herself with the veil of deceit she left her home and went off to the bazar. By chance she happened to pass the entrance of the bath just as Khwāja Ibrāhīm was coming out in company with his merchants. From his appearance she saw that he was a fine and sturdy youth so she just showed him a little of her face from under her veil. Now as soon as the eyes of Khwāja Ibrāhīm lighted on the lady, the reins of restraint went out of his hands. Giving his merchants the slip he made off and followed the lady, till she came to her own door and entered. Khwāja Ibrāhīm was left standing on the outside. As he had no excuse for entering, he went and sat by the edge of a stream near by, and taking out his book began to read. Presently the lady went on to the roof: her eyes fell on Khwāja Ibrāhīm and she recognised him as the youth she had seen coming out of the bath. She called to him from the roof, "Young man, what is that book in your hand?" Khwāja Ibrāhīm replied, "This book is called the 'Wiles of Women,' and I have myself composed it." "Oh!" said the lady, "get up and come in. I'll teach you more about the wiles of women than ever your book can."

Now Khwāja Ibrāhīm was just longing for this. He entered the house and sat down in the guest chamber. The lady rose, laid the table and got everything ready for a carouse, and then sitting by his side began to take wine. Then Khwāja Ibrāhīm recited a couplet, and drained a glass, and put his arm round the lady's neck, and kissed her a few times on the cheek. Just then a noise of knocking came from the street door. The lady called out from the *tālār*, "Who is knocking at the door?" Her husband's voice replied out from outside, "Get up; come, and open the door to me." Khwāja Ibrāhīm on hearing the voice said, "Who is on the other side of the door?" The

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[1] *Vide* note 10, page 396.

lady said, " My husband." The colour fled from Khwāja Ibrāhīm's cheeks. Seizing the lady's skirt with both hands, he said, " I throw myself on your mercy ; I'm a stranger. If your husband sees me he'll kill me. Hide me somewhere." The lady rose, and opening a large chest containing clothes, removed the contents, saying, " Young man, come, get inside. My husband will eat his breakfast and then depart. I will then come and let you out." The lady closed and locked the chest and then went and opened the door and admitted her husband.

The husband came in and saw that his wife had made everything ready for a feast, and had changed her clothes and adorned herself. " Woman," said he, " for whom have you made ready this feast ? " Husband," said she, " I had a guest." " Who was your guest ? " said he. The lady said, " This morning I went to the bazar and I saw a good-looking youth : I showed him my face and returned home. I then went on to the roof and saw the same youth sitting by the stream. I called him in. This feast was for him. We drank a few cups of wine and he snatched a kiss or two. Then you honoured us by arriving and knocking at the door. The youth besought me to hide him somewhere from you. I thought to myself that if I hid him in the stable he might run away from me, so I hid him in that chest and locked the lid. As for the rest you are my husband : kill him if you like ; spare him if you think fit ; do just as you please."

The merchant became purple with rage and screamed out, " Rise and fetch my dagger that I may sever his head from his body." The lady rose and laid the dagger at her husband's feet. He said, " And the key—where's that ? " The lady felt under the matting and produced the key and placed it in her husband's hand, at once exclaiming, " I remember, thou forgetest," and began snapping her fingers and dancing. The merchant thought she had planned the whole story as a trick to win the philopena : he dashed the key on the floor, seized his cloak and rushed out of the house. The lady ran to the window and shouted after him down the street, " My dear, I shan't accept from you a forfeit that's cheap."

The lady then opened the chest, and behold ! the youth had fainted. So she lifted him out, sprinkled his face with rose water and revived him. His eyes began to wander round the room as he asked, " *Where* is your husband ? All I possess I will give you, if you get me out of this house alive." " Young man," said the lady, " what has happened to you ? I was merely talking with my husband. Why did you get afraid ? " The youth said, " From your talk with your husband I fainted." She answered, " It was all a trick of mine to get rid of my husband, so that you and I might be alone together." Khwāja Ibrāhīm said, " Woman, what can I give you to let me go free ? " She said, " Write me a bond for a hundred *tūmāns* and I'll get you out safe. I will come to your office door later and get the money." Khwāja Ibrāhīm agreed, wrote the bond, sealed it, and handing it to the lady, left the house and returned to the caravanserai.

His companions at once perceived that he was upset. One of them smarter than the rest said, " Khwāja Ibrāhīm ! Is everything all right ? Where have you been ?

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[1] Muslims have seals with their names engraved on them ; they seal documents ; they do not sign them.

Come, tell the truth." Khwāja Ibrāhīm then related the whole story in detail. One of his companions said, "Khwāja Ibrāhīm! If the woman comes with the bond, say nothing at all, but just give her the hundred *tūmāns*. If to-morrow I don't get back that hundred *tūmāns* from her, with her own consent, together with three hundred more, I'm no man."

While they were thus talking the lady came to the caravansera. Khwāja Ibrāhīm got up and gave her a bag containing a hundred *tūmāns* and took back his bond, and the lady departed well pleased.

Next morning early Khwāja Ibrāhīm's companion said to him, "Get up, come and point out to me that woman's house." So Ibrāhīm and his friend started and arrived at the door. Khwāja Ibrāhīm hid in a corner while his companion knocked. A negress came to the door and opening it saw that there was a merchant[1] there. "What do you want?" she asked. "Kindly," said he, "represent to your mistress that a merchant has something to say to her." The girl carried the message, and the lady putting her head-dress on her head came behind the door. The merchant greeted her and said, "Lady, yesterday I heard from my companion a description of your glorious beauty, so I have brought with me these hundred *tūmāns*, merely to view your face and depart." The lady took the hundred *tūmāns* and then showed him her face.

The merchant and Khwāja Ibrāhīm returned to the caravansera and, taking another hundred *tūmāns*, returned to the lady's door and knocked. The lady came to the door and opened it. The merchant said, "I am that merchant who paid a hundred *tūmāns* to view your face. I have a hundred more, and want just two kisses from your cheek in exchange." The lady said to herself, "What more profitable way of getting money is there than this?" She took the hundred *tūmāns* and let the merchant take two kisses. The merchant and Khwāja Ibrāhīm returned, got another hundred *tūmāns*, and came and knocked again at the door. The lady answered the knock. Khwāja Ibrāhīm concealed himself in the entrance hall,[2] so that the lady could not see him, but the merchant entered the house saying, "I am that merchant who gave you a hundred *tūmāns* to view your face and another hundred for two kisses. I have with me another hundred *tūmāns* which I will give you on a certain condition." The lady replied, "Well, there's no great harm in that." She took the money and entered her room.

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So he got back the three hundred *tūmāns* he had given her that day and three hundred beside them.

The lady could not resist coming in the morning to the door of the caravansera to see the merchant. He began to rate her soundly, "You thought to yourself," said he, "that you were wily? You locked my friend in a box and got a hundred *tūmāns* out of him merely to show how tricky and wily you were? You didn't guess that there

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[1] His small *pagrī*, *kamar-band*, and *āb-dast* (or long tight cloak with tight sleeves) would proclaim him a merchant.

[2] *Dālān*, the entrance or hall, is between the outer door opening on to the street, and the inner door leading into the courtyard.

are those in this world wilier than you." The lady understood that what had happened was the work of the first young merchant and went off to her home. Then the merchants loaded up and leaving Kirmān returned to Bandar-i 'Abbās to the father of Khwāja Ibrāhīm, to whom they related the whole adventure. The father turned to his son and said, "My son, did I not tell you that the women of Kirmān are deeply wily, but you gave no ear to me? Had your companions not been with you, you would either have died in that chest, or else have lost all that you possessed." The son saw that a mere man can fathom naught of the deceit of women, and that the wiser a man is the less he knows of the subject. Out of conceit with himself, he erased his treatise on the wiles of women and cast it from him.[1]

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II.

THE THREE COMPANIONS.

The Adventure of the Scald-head.

Three friends joined together to go somewhere or other and, by swindles, to try to obtain a livelihood. One had a thin beard,[2] one had a scald head, and one was an opium-smoker. All three went to Iṣfahān. There they cast lots amongst themselves to see who should first try his hand. By chance the lot fell on Scald-head. He went out and found himself outside a cook-shop. There he stood thinking, for he owned not a single farthing. He said to himself, "I'll go in and get a full meal. At the worst I shall get a good drubbing." So he dashed into the shop and calling to the cook's mate said, "Hie! go and bring such and such dishes," for, said he to himself, "as I am to get a beating let me at least have a really good meal." He tucked up his sleeves and sat down at his ease to eat. When he had finished, the head of the shop came and asked for payment. Scald-head began to look hither and thither when, by chance, his eyes lighted on the cash-receipts box and he saw that there was one gold coin in it. "Oh man!" said he, "haven't I just paid you a sovereign? Give me my change. Do you want to swindle me?" The head saw that the aspect of affairs was bad. He seized Scald-head with one hand by the collar, and with the other by the throat, and carried him to the wall, and banged his head against it till it began to bleed. As soon as Scald-head saw this he began to sham violent injuries and cried out, "Help! I'm attacked! I'm killed! I'm robbed!" It chanced that the Chief of the Police was passing by. When he saw this state of affairs he asked what had happened. Scald-head pulled himself forward and said, "Oh master! I took a meal, and tendered him a sovereign, and now I want my change. This fellow has beaten me and broken my head. It [the sovereign] is still in his cash-box." The chief of

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[1] A Persian manuscript is said to exist called the "Wiles of Women," probably a translation from the Arabic. I, however, failed to obtain a copy in Persia, being assured that the work no longer existed, as the original had been destroyed as explained in the conclusion of this tale.

[2] *Kūsa*, adj., generally translated 'thin-beard,' is one with a beard on the chin only, like a Chinaman, the side whiskers being either absent or sparse. *'Umar* is said to have had this defect. A *kūsa* is generally compared to a he-goat. The opposite to *kūsa* is *rīsh-pahn*; vulgarly *rīsh-chapa*. *Tūp-rīsh* or *rīsh-gappa* is "thickly bearded; with a *thick* beard."

[3] *Ustād* may mean either the owner of the shop or the manager.

the Police seized the head, and gave him a sounding box on the ear, saying, "Bastard! do you take people's sovereigns and beat them too?" He then turned to Scald-head and said, "As to what you have eaten, don't pay for it; consider it an exchange for the beating you got. Here is your sovereign; take it and be off." Scald-head seized the money and disappeared from view. He came to his companions and casting down the sovereign exclaimed, "Ah, you sons of dogs![1] here are my earnings. To-morrow it will be your turn: you must then go and display your cunning."

The Adventure of the Opium-smoker.

The next day the lot fell on the opium-smoker, so he agreed to go off and 'make' something. He rose early and exclaimed, "O God! what cheatery can I devise to get hold of some money so that my companions may not abuse me?" Casting his cloak over one shoulder he went out and wandered from street to street, till at length he met a woman who said to him, "Man! are you not a stranger hereabouts?" He said, "Yes, sister; I *am* a stranger; I do not know my way about." She said, "Will you come with me to the house of the *Qāẓī* and give me a divorce?[2] I will pay you ten *tūmāns*." He said, "Willingly, sister, come along; you go ahead, I will follow." To earn the money he went with the woman to the *Qāẓī's* house. When he entered he saw a venerable *Qāẓī* with a thick beard and an enormous turban seated reading to himself. The opium-smoker greeted him and said, "Oh *Qāẓī*! this is my wife. I don't want her. Grant me a divorce." The *Qāẓī* said, "Oh man! why art thou divorcing this woman?" He replied, "This wife is no use to me. Without permission she gads about, and a wife that gads about without the permission of her husband is of no use to him." The *Qāẓī* saw the matter admitted of no alternative, so he began to read the formula of divorce. When the divorce was complete, the woman called the man aside and produced an infant from her bosom[3] and said, "Here, hold it, till I come outside and pay you your money." The opium-smoker took the baby in his arms and went out to the corner of the street, and stood there waiting for the woman. When he saw that the woman did not turn up to take her child, he went back to the house of the *Qāẓī* and said, "Oh *Qāẓī*! where has the woman gone whom I divorced?" The *Qāẓī* replied, "Fellow! *you* divorced her. How do *I* know what's become of her? You know where she lives: go and find her."

The child is now in the arms of the opium-smoker. He is hungry, the child is hungry; he wanders from street to street. At one time he says to it, "Who is your father?" at another, "Where is your mother gone that you should have fallen to my lot?" At last he decided to leave the infant in a quiet corner and to make off. He came to a dilapidated mosque. By chance someone had, only the day before, left a foundling in this spot, and the attendant of the mosque was consequently on the watch. He saw someone approach very stealthily, take a child from under his cloak, place it on the ground, and hurry away. The servant ran after him calling out, "Oh son of a burnt-father! whence are you bringing these fatherless foundlings to foist on us?" He seized him, gave him a sound thrashing and then put in his arms both the infants, *i.e.*,

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[1] *Lūṭīs* often playfully address each other as *Bābā-sag*, *Pidar-sag*, etc. No offence is meant.

[2] *i.e.*, by his personating the husband the woman could get a written deed of divorce that would enable her to marry again.

[3] Women, when they go out, always wear a *chādar*, and this would completely conceal the infant.

the one left the day before and the one just brought, and giving him a slap or two on the back of the neck said, "Cuckold! be off. Don't let me catch you near here again—mind."

The opium-fellow, with two babies in his arms, wanders about the streets. He slaps the children and exclaims, "Oh children of burnt-fathers! Have you to-day fallen to my lot to bring ruin on me?" At length he arrived at an old ruined bath. There placing the children on the ground he began to make off at a run. Someone happened to be sitting there and saw all this, and calling out "Son of a burnt father! Bastard! Whence have you brought these babies and left them here?" began to hurry after him. Away run the two, the opium-smoker ahead and the other after him. The opium-smoker spied an open door and dashed in to hide.[1] Inside he found a flight of steps; in fear of his life, he mounted and sat down half way up, exclaiming to himself, "O God! now they are coming to force these children back into my arms." He heard someone knock. "Oh," he exclaimed, "here they are. What on earth am I to do?[2] I do not know where to flee." A negress came to the door and opened it to a smartly-dressed youth, who said to her, "Go, tell your mistress that so and so, who saw you in such and such a place,[3] and there made an appointment with you, has come."

When the negress carried the message to the mistress, the latter said, "Take him upstairs till I come." The negress returned to the youth and said to him, "Kindly come upstairs. My mistress will come in a moment." When the opium-smoker heard the youth mounting the stairs, he hurried off and hid in a back room on the upper storey. The youth mounted and, after a minute or so had elapsed, the opium-smoker saw a finely-dressed and bejewelled lady come up the stairs. The two entered a room and began to embrace and kiss. The opium-smoker who was peeping through the door saw all this.

While they were thus engaged the husband of the lady arrived. The negress, who was on the watch to warn her mistress of intruders, ran up and said, "Mistress! Mercy on us, the master has come!" The lady rose in agitation and said to her lover, "Dear, go into that back room and hide." When the opium-smoker heard this, he hastily got into one of two large jars that were there.[4] Then the lover came in, got into the other jar and hid. The husband came upstairs. "Wife!" said he, "what are you doing here?" She said, "I'm sweeping and cleaning. What can I do?—this girl does not do her work thoroughly." The girl said, "Ah master! you little know all what my mistress does and the anxiety she suffers." The husband said, "I have brought a quantity of flour; store it in these jars here." The lady answered, "This jar is broken; a mouse too died in it a few days ago.[5] Put the flour in that other jar." (The lady knew in which jar her lover was concealed.)

The lady and the girl then brought the bags of flour to the other jar and poured

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1 Opium-smokers are short-winded.

2 "What ashes shall I pour on my head?"

3 The story-teller substitutes "such and such" for the names given by the youth.

4 The *pastū* would be the natural place for such jars.

5 It would therefore be *najis* "unclean" and unfit for use, and being earthenware it could not be purified.

them into it. The opium-fellow, with his hand over his mouth and nostrils, kept pressing the flour down under him : as fast as the women poured in the flour he trampled it down. All of a sudden the jar burst, and the ill-starred opium-smoker fell out smothered in white flour. At first they thought he was a *jinn*. All were startled. The husband said, "Unmannerly fellow! Whence came you hither and what do you want?" The fellow said, "I came in company with my master." "Which particular dog happens to be your master?" "He is in that jar." Now the lady begins to stare. Her husband lifted a pick and banged it in the middle of the jar. Out came another buck-man. The husband said, "Dash, dash, dash![1] Now where have *you* come from?" The lover chap said, "I lost my way and came into the house. I thought someone would guide me. You arrived behind me, so through fear I came here for shelter." The husband and lover gripped each other by the throat and hair, and began to bang and belabour each other with all their might. In the midst of the confusion off went our opium-smoker. Outside he shook off the flour. "Oh God!" said he, "to-day thou hast given me a strange portion for daily bread." He was just going to cross over the street when he sniffed the savour of sweet cakes. Hunger overcame him and he said to himself, "Come, let me enter this house. If I get a beating I don't care a curse; I shall at least get something to eat." He entered. He saw a woman sitting there with a youth by her side, and she was at the same time kissing and cuddling and baking bread. The woman's lover exclaimed, "Ass of a fellow! dost thou enter people's houses without permission? Be off, or I'll break your head." Whilst he was speaking the woman's husband entered saying, "Oh yes, how nice! People are all saying my wife is a light-skirt. I did not believe them. Now I have proof. Oh you shrew! pray, for whom are you baking cakes? Now I know you have lovers." The woman answered, "It's for these poor strangers[2] just arrived. They have no acquaintances in this city."

The eyes of the opium-smoker had been fastened on the cakes, and he was anxious to get hold of them and go off. He said to the husband, "Man! you have a rare and noble wife. May you never lose her." Saying this he began to gather up the cakes. By a gesture the woman asked him where he was carrying them. He signalled back, "Keep silence! I'll keep them with me till your husband goes away." Carrying the cakes in his arms he very slowly backed away till he reached the door, when he made off. He hastened to his companions and said, "Hie, you rascals![3] I have endured many dangers to get these cakes. To-morrow it is the turn of Thin-beard." The latter replied, "Very well; to-night let me rest, to-morrow I'll tell you what trick I'll play."

The Thin-beard's or Kūsa's Trick.

Thin-beard rose early and said to his friend, "Take me to the *Takht-i-Fūlād*, lay me down in a bier, and draw a sheet over my face. Do one of you sit at my head and one at my feet, and cease not slapping your heads and faces and wailing, 'Alas my poor

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[1] *Fulān fulān shuda*, lit. "You who have become so and so": a polite substitute for a filthy torrent of abuse.

[2] To help strangers is a meritorious act.

[3] *Nā-najīb*, lit. "ignoble." A father will say to his small son, *Āy nā-najīb chi shaiṭanat mī-kunī*, "What mischief are you up to, naughty boy?"

father ! Alas my poor father ! ' [1] Every passer-by will certainly contribute something." The companions acted as instructed, and in no long time a good sum of money was collected. By chance a Government official happened to be passing by. Looking attentively he heard [2] the dead man in the bier demanding an account and saying to his comrades, " Oh, you sons of dogs ! How much have you collected ? " The official said to himself, " Oh earners of iniquity ! [3] No man am I if I do not put you alive into the grave." He then came opposite the bier and said, " I am appointed by the Government to wash, shroud and bury with my own hands every stranger that happens to die here." Then turning to his men he said, " Boys ! take the bier on your shoulders." To the entreaties and supplications of Scald-head and Opium-smoker, who represented that they had collected sufficient money and would themselves bury the body, and who besought him not to trouble himself, the official turned a deaf ear. He had the bier lifted and carried to the dead-house [4] and there he dismissed his men. He then took out the corpse and laid it on the washing plank. While washing it he gave it several blows on the ribs with his fist : " Bastard ! " [5] said he, " what sort of a corpse are you, asking an account ? " Thump him as he would the corpse put up with it all, and uttered not a sound. Scald-head and Opium-smoker now arrived and came to the door of the washing-house, entreating and supplicating him saying, " Oh sir ! What art thou doing with our dead ? We will ourselves attend to his obsequies." The official turned round to shut the door on them, when Thin-beard, seeing his back turned, stretched out a hand, seized a handful of the *ḥalvā*,[6] crammed it in his mouth and gulped it down. The official seeing the corpse had eaten some *ḥalvā* exclaimed, " All right, you spawn of Satan ! I know how to deal with you." He then seized him and ducked him in the tank in which the corpses are washed. Thin-beard took the opportunity to swallow a mouthful or two of water,[7] and again gave himself up to shamming dead. The official saw that things were difficult. He seized him, struck him, kicked him in the ribs, exclaiming, " Son of a wanton mother ! [8] A rare corpse are you ! I know you ate the *ḥalvā*, and swallowed some water." By this time it had become dark, and the official having dismissed all his attendants is at a loss what to do. Suddenly he hears the *whis whis* of whispering outside.[9] He gave ear and heard some one say, " Let us go into the dead-house : it is quiet there and we can there divide our loot without interruption." It became clear that they were a band of robbers [10] that had attacked and robbed a caravan. In fear of his life, the Government official dashed into the bier and

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1 *Mazlūm* does not mean " ill-used " : *īn asp mazlūm ast* (m.c.) " this horse is quiet."

2 *Dīd* " saw."

3 *Ḥarām luqma* or *harām tūsha* or *harām khwār* according to some means, " one who subsists by unlawful means " ; according to others, " one to whom it is unlawful to give food " ; a third interpretation is, " one born of a father who earns his living by unlawful means."

4 *Murda-khāna* vulg. for *ghassāl-khāna*.

5 " Son of an impotent father " and hence " bastard."

6 *Vide* page 402, note 7.

7 *Ḥalvā* produces thirst.

8 The implication being that he is not the son of his father.

9 *i.e.*, outside the wall of the dead-house.

10 The robbers would be a band of villagers or city-folk who, by day, would be engaged in peaceful occupations.

lay down close by Thin-beard.[1] The thieves entered, and seeing two corpses pushed them aside and sat down. A sword happened to be part of the loot. One of the thieves said, " This falls to my share." Another said, " No ; whoever can cut this corpse in two with one blow will have a right to the sword." A third got up, rolled up his sleeves and said, " I'm the man for this job ; I'll cut *both* in two with one blow."

The official now whispered to Thin-beard, who was lying close to the bier, " Hie comrade ! You'll be killed yourself and you'll get me killed : do something." Suddenly Thin-beard rose from the washing plank clapping his hands, and shouted out, "Oh ye dead ! rise and seize the living ! " The official sprang up from the bier and cried out, " Seize them, strangle them ! " When the thieves saw the dead rise they left their loot and fled.

Afterwards the thieves consulted together deciding that the dead would not carry off the booty and that some one ought to go and see what had happened. One came forward and said that he would go and see whether the dead had departed or not. Thin-beard looked out and saw one of the thieves approaching : he went and hid behind the door. As soon as the thief put his head inside to see whether the dead had gone or not, Thin-beard snatched off the thief's cap, saying to one of the dead, " This is your farthing share."[2] The thief ran off and returned to his comrades and said, " Friends ! there are so many ' deaders ' there, that of our loot the share of each amounts to only a farthing. One had not got his share, so my cap was taken to make it up." The thieves all vanished.

In the morning Thin-beard said to the officer, " Come, let us be friends and divide the spoil." Thin-beard took his share, and went to his companions and related what had happened.—And now good-bye, my tale is done.

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III.

THE SHIRAZ SWINDLE.

There were two companions who came to Isfahān to perpetrate some paying swindle and they were citizens of Shiraz.[3] Each of them had three hundred *tūmāns* in cash. One of them with his money came to the shop-door of a certain cloth-seller and struck up an acquaintance with him. They entered into conversation. The cloth-seller said to his shop assistant, " Walk this gentleman's horse about." The man took the horse and the money, and disappeared. In a short time the master of the man that had taken away the horse and money, made some excuse and shut up his shop and went his way. The new-comer was left where he was, lost and bewildered. Suddenly he spied a woman with a bundle on her head coming out of the bath. She addressed him and said, " Carry

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[1] The *kūsa* would be on the low washing-table, and the bier would be on the ground.

[2] *Vide* page 403, note 2.

[3] *Vide* page 403, note 4.

this bundle for me to my house." Now this woman was the wife of the owner of the shop. The two quickly reached the woman's house. There they spread a feast.[1] They were thus engaged when the shop-keeper came and knocked at the door. They skipped apart and the woman quickly rolled the man up in some matting and put him in an adjoining room. The owner entered and came into the guest-chamber. He saw that his wife looked disturbed and said, " What has happened to you ? " " Nothing," she said, " I'm just worried about house matters." The man smoked and went out. The stranger then came out of the matting and made up for deferred enjoyment. It was settled that the woman should give him a hundred *tūmāns* and a suit of fine clothes. The man went off and at last found his way to the shop of the cloth merchant, and greeted him and said, " You took my money; well, God has given me money. I have arranged to go every day and visit such and such a woman who lives in such and such a quarter and get a hundred *tūmāns* and a suit of clothes." The merchant said, " Oh you! if you go to-morrow, will you take me too ? " The man replied, " Yes, certainly I will; I'm no niggard." The next day arrived. The man came and passed by the shop door of the cloth-seller and said, " Come along; get up and let us go there." Saying this, he went on ahead. By the time the merchant had closed his shop, the lover of the woman had reached her house. Just as he was greeting her, the owner arrived and knocked. Again the woman rolled her lover up in the bedding. The husband came in, but though he searched everywhere he failed to find his wife's lover. Much disturbed he went out of the house. The lover came out of the bedding and had a good time. Again the woman gave her lover a hundred *tūmāns* and sent him away. The man came to the shop and said to the cloth-seller, " Why did you stay away ? I went to the house of the lady. Her cuckold of a husband came but did not see me there." The cloth-seller adjured him saying, " You must swear to take me with you to-morrow when you go." To-morrow came. The man came near the shop, and made a sign for the shop-keeper to get up and accompany him. Having done this he went on ahead. He entered the house and saw that his mistress had just come out of the tank.[2] While they were conjugating the verb *amo, amas*, the husband arrived and banged the knocker on the door.[3] The woman jumped up and rolling and pushing her lover crammed him into the milksafe and hauled it up.[4] Her husband entered. The woman got him to sit down exactly underneath the milksafe and then sat by his side. She saw that part of the person of her lover was visible from underneath the milksafe and wished to make him conceal himself better, so she took up a tambourine from the niche (shelf) and began to sing this song to her husband:— * * * * * * * *[5] Accordingly the man began to move, when the cord of the safe snapped and down he came on the husband's head. The woman jumped up in great concern and closed her husband's eyes with kisses and fondlings, while her lover gently crawled

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[1] *Majlis chīdan;* there is always an idea of wine-drinking in such expressions.

[2] *i.e.*, the tank with a fountain found in the courtyard of most Persian houses.

[3] The street doors of many Persian houses have knockers.

[4] The milksafe is suspended from a hook in the ceiling and pulled up, by a cord, out of the reach of cats.

[5] These lines are nonsense.

away and hid in an adjoining room. There he remained till the husband went out. The man then went to the husband's shop and narrated all the details of his adventure. The cloth-seller said, "Oh you! I adjure thee by thy manly moustaches[1] to take me with you when you go to-morrow, so that I too may see the fun." The man said, "Certainly, I agree." The next morning he came to the shop and said, "Get up, let us go." Saying this he went on ahead and left the cloth merchant to follow. The lover knocked and entered the house. The woman had now spent all the money she had, so she said to her lover, "You must to-day go into this tank[2] and I will cover your head with a gourd.[3] I have made some *changāl*[4] and I and my husband will eat this together. We will make bets and throw the stones at the gourd." The man stripped and concealed himself in the water. The husband arrived and knocked at the door. The woman opened and together they entered.[5] The woman then placed the *changāl* in front of her husband and invited him to eat, displaying a thousand feminine airs and graces. She lifted up a date stone and looking at the gourd said, "I'll shoot at that. If I hit it, I'll win ten *tūmāns* from you." The man said, "No, I will shoot." The woman said, "Certainly; but if you do not hit, you'll lose, so look out." The cloth-seller put the stone in his finger[6] and shot. He missed, for the lover could see from inside the gourd, and moved his head aside, so that the stone missed. The husband had three or four shots and the lover made them all miss.

Having lost forty *tūmāns* he left in disgust and went to his shop. The man, the stranger, again went to the shop door of the cloth-seller and said, "I congratulate you.[7] I have finished my business for I have received a sum equal to the value of the horse and the cash I lost with it. What a fool of a man is that husband; he is more foolish than his wife."[8] The cloth-seller said, "Relate all this before a witness and I will pay you." (You must know that the wife of the cloth-seller was the sister of the *Mujtahid*[9] of that district.) The man replied, "Why not?" The cloth-seller invited all the learned men and divines, and the local gentry, to meet in the house of a neighbour, and he included in the invitation the *Mujtahid* who was his brother-in-law, and said to his wife's lover, "Now relate it all." The stranger began to tell the tale. Some one went to the woman and told her that such and such a man was in the house of such and such a neighbour, relating a story about her. The woman put on her *chādar* and went on the roof and watched the proceedings through a small sky-light. She recognized her lover and saw that he was telling all that had happened and had reached the point where her husband was shooting at the gourd. She had a small mirror in her breast.

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1 A common oath amongst the lower orders.

The water was probably very green and opaque.

3 Perhaps an empty gourd used as a receptacle for rice, etc.

4 *Vide* page 404, note 11.

5 *i.e.*, entered the *ṭālār* which would be open to the courtyard and would overlook the tank.

6 He would place it on the tip of the middle finger of one hand: the finger would then be used as a spring, being pulled back by the other hand and then released suddenly.

7 Said ironically.

8 *Women* are supposed to be deficient in sense.

9 *Mujtahid*, a divine of high rank.

She took it out and held it to the sun and cast the reflection on to the face of her lover. He looked up and saw the woman scratching her face.[1] The lover understood the signal and added these words—" When suddenly I awoke out of my dream." Those present said to him, " Did all these things happen to you in a dream ? " The man said, " Certainly. Do such things happen in real life ? "[2] The assembly got up and thrashed the cloth-seller. " Effeminate creature ! " said they, " Why did you tell these lies ? Why did you make these false and silly charges against your wife ? " An order was issued for the cloth-seller to be impaled,[3] and after the legal period of four months and ten days[4] the woman was married to the stranger, and he had by her, in a few years, five children—two girls and three boys. And now my tale is told.

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IV.

STORY OF MUḤAMMAD JA'FAR.

Once upon a time there was a servant. One day his master sent him to a distant village to collect certain dues. Before he reached his destination the sky became overcast ; night and a snow-storm overtook him. He was lost in the midst of the desert and knew not what to do, when suddenly the notes of a cornet struck on his ear coming somewhere from his right.

He turned and went in the direction of the sound when the rolling of a hand-drum also reached him, and a few steps further on, the outline of a fort loomed in view. The snow fell thicker, and he had lost all trace of his whereabouts. He went to the gate, pulled his horse through it, and found himself in a street ; a few steps further on, he came to a great door. He pushed open the door and pulled in the horse after him. Searching in his pocket he produced his pipe and tobacco pouch, and striking a match saw by its light that he was in a large outhouse containing mangers and a store of chopped straw. Thanking God that his horse would not go hungry, he tied it up to a manger and cast before it a quantity of straw. " If," said he to himself, " I go in search of a dinner, some one is certain to come and steal the bit and stirrups. Well, I shan't die of hunger in *one* night." So saying he mounted the platform of the outhouse, shook his felt to remove the snow, covered himself with it, and putting the horse's nose-bag under his head, fell asleep. A little later he became aware that some one, a woman, had put her head inside the door and had called " Muḥam Ja'far " three times. Said he to himself, " Muḥam Ja'far must be the husband, or the brother, or the son of this woman. Certainly she has brought some *pilo*[5] or something of the kind to give him secretly.

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1 *Vide* page 405, note 3.

2 *i.e.*, 'you had not courage to speak the truth but fabricated these lies to get a divorce.'

3 The punishment for *qazf*, or falsely accusing a married woman of adultery, is 80 stripes.

4 *Vide* page 405, note 4.

5 *Pilo* is rice cooked with butter, meat and spices : *Chulo* is rice only, cooked with butter.

I'd better answer her and get hold of the eatables." Accordingly he called out, "Yes." The woman came forward, mounted the platform and putting her arm around the man's neck said, "May I be thy sacrifice! Hast thou brought the shoes and the chintz?" The man was at a loss what to say. He thought that if he said "No" the woman might not give him the food. He therefore answered, "Yes; I've brought them; they are at home; in the morning I'll give them to you." When the man rose she said to him, "Muḥam Ja'far! I adjure thee to give me the shoes early as I want to wear them at the wedding." The man replied, "Lady, excuse me; I'm not Muḥam Ja'far. I am Ḥājī Ḥusain of Iṣfahān." The woman exclaimed, "I'll play hell with you," and, putting both hands on the stable door, she shrieked out "Thieves! thieves!" three times. People with sticks in their hand came hurriedly towards the stable from the house where the festivities [1] were taking place, and the man saw that if they caught him it would be all up with him. Suddenly with both hands he gave the woman a push and sent her flying into the garden on to the soft snow, and escaping outside made for the gateway of the fort. The gate was locked. He was in fear of his life; suddenly he espied some steps in a corner of the covered gateway. He mounted the steps and found himself in an upper room. Sitting down in a corner he watched the door of the stable below. He saw lights brought. "Woman," said the crowd that had collected, "where is the thief? There's no thief here at all." "What answer," he wondered, "will the woman give?" She said, "I was just crossing over when I heard a noise coming from the stable and thought it was a thief." They said, "It must have been this horse you heard. It evidently belongs to some gentleman. He has tied it up here and gone inside to join the wedding party." They then went about their business. The man thought he had better remain quiet where he was till they had scattered, and that he would then go and lie down by the side of his horse, and mount it at day-break and go off. He was still thinking, when the sound of foot-steps on the stairs reached him, and for fear lest it was some one still looking for him, he hid in a corner. A woman put her head in at the door and called out gently, "Muḥam Ja'far! Muḥam Ja'far!" three times. He guessed it was the same woman and replied, "Yes." The woman then came forward and putting her arm round the man's neck said, "May I be your sacrifice! You were *here* and I had nearly been the cause of a murder out there." The man said, "Yes." The woman said, "Come, tell me, have you brought me the shoes and the chintz?" The man recollecting what had happened in the stable said, "I've brought them and I've had the shoes tipped—but they are at home; they are not here with me." The woman said, "Why didn't you bring them with you?" The man answered, "I thought perhaps I mightn't see you, so I left them at home. I'll bring them in the morning." When the man got up, the woman said, "Muḥam Ja'far, I adjure thee to give me the shoes early that I may wear them at the wedding." The man replied, "Lady! excuse me; in the stable just now I humbly represented that I wasn't Muḥam Ja'far but Ḥājī Ḥusain of Isfahān come to collect revenue. I lost my way and so came here.

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[1] *Vide* note 8, page 405.

Kindly excuse me." The woman exclaimed, "This time I *will* play the devil with you and you won't forget it. I shan't let you escape." She went to the top of the steps and began to shriek "Thieves! thieves!" without stopping, till old and young with sticks and staves in their hands made for the gateway.

In fear of his life, the man jumped from the wall and found himself in a street. He went on till he came to the door of a house. On putting his hand to the door it opened. He entered calling out, "Master of the house!" but no one answered. He saw a door opposite him, and there appeared to be a light in the room. He went to this door and called out, "Oh owner of the room! Oh brother! Oh mother! Oh sister! Oh uncle, Oh Pilgrim of Karbalā! Oh Pilgrim of Meshed!" but the more he shouted the less answer he got. Consequently he opened the door. Inside the room he saw a very large *kursī* [1] with a quilt over it and a lamp burning on the top. The man cast his felt into a corner and went for the warmth underneath the quilt. In about a quarter of an hour he felt very hungry, so he got up and wandered about till he found some bread which he tried to eat. Dry bread not being palatable, he again got up and wandered round till he found some butter. He sat down under the quilt and ate the bread and butter. Feeling inclined for a smoke he found a *qalyān*. After smoking he laid the *qalyān* aside, closed the door, extinguished the light and went to sleep. In a little while a women burst open the door in a rage and entered muttering and blaming herself. "A curse on my father," she said, "if I ever give my heart to the men of these times! From sun-down till now I've wandered about in the snow, all for nothing." Suddenly she tripped and fell on the man. Feeling his features with her hand in the dark, she exclaimed, "Muḥam Ja'far! you here while I've been looking for you inside the fort since sunset?" The man said, "Yes; I went to the wedding but didn't see you there. As I knew your house I came here and slept, knowing that sooner or later you must return. I was asleep till this moment." Without lighting the lamp she came and lay down under the *kursī*. The man had eaten his fill, and smoked, and become warmed through under the *kursī*. He was refreshed. He then looked at the lattice and saw it was getting light. Said he to himself, "As soon as the dawn breaks this woman will discover me and entangle me in a difficulty. I'd better be off now." As soon as he got up to go, the woman seized his skirt and began to adjure him saying, "Muḥam Ja'far, bring me the shoes this very instant." The man burst out laughing and said, "Lady! did I not in the stable say I was not Muḥam Ja'far, but Ḥājī Ḥusain of Iṣfahān? You didn't believe me; you followed me into the upper room. There, too, I told you I was not Muḥam Ja'far. Again you refused to believe me. Now I swear by God I am *not* Muḥam Ja'far, but Ḥājī Ḥusain of Iṣfahān."

When the woman heard this she said, "I adjure thee by God! Art thou a *jinn* or art thou a fairy [2] that wherever I go I find thee?"

The man said, "Woman, first you tell me who you are, and who Muḥam Ja'far is?"

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[1] *Kursī*, *vide* note 5, page 407.

[2] *Vide* note 15, page 407.

The woman said, "Muḥam Ja'far is the son of the *Kat-khudā* of this village, and for two years he has been in love with me, but union has not been possible. To-day there was a wedding in the fort. When he was starting for the city to buy the necessaries for the wedding I told him that, if he would bring me six yards of chintz for a petticoat and a pair of green shagreen shoes, and give them to me that night, I would accede to his wishes." At sunset he returned from the city and showed me the shoes and the cloth, telling me that he would give them to me in the evening and attain his desire. I was wandering about in search of him when I lighted upon you—and this house, too, is my own, and since evening up till now I've searched in vain for Muḥam Ja'far. Now tell me and let me know who you are."

The man said, "I am Ḥājī Ḥusain of Iṣfahān and I was on my way to the tent-folk of Ḥaidar 'Alī Khān's tribe to gather revenue, when night fell, and I was overtaken by a snow-storm, and lost my way. So I entered the fort and there I happened to meet you."

The woman said, "I am a respectable woman. For the sake of God, don't tell."

The man said, "If you will give me rations for the road I will say nothing."

The woman went and fetched some bread and butter and gave it to the man. She then went and brought his horse, and the man mounted and went about his business—and now good-bye; my tale is told.

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V.

THE STORY OF THE ḤĀJĪ OF KHWĀBJĀN: OR, WHO SPEAKS FIRST?

There was a Ḥājī of Khwabjān. One day, entering his house, he saw his wife busy about something and said to her, "Wife, get up and water the sheep." She answered, "Are you blind? Can't you see I'm sewing?" The man lost his temper and threw a stick he had in his hand in her direction. The woman got up and seizing a snow-shovel heaved it towards the man. "Man!" said she, "sit down; let the first of us that speaks go and water the sheep." They both sat down. The woman began to feel bored and upset by the enforced silence; so she said to herself, "I'll just get up and go and visit a neighbour, and after a chat I'll come back and try and entice the husband into speaking." She put on her head-dress and passed in front of the man, hoping that he would ask her where she was going; but the man said nothing. The woman went off to a neighbour.

The man, left alone, felt lonely. So he got up and sat in the doorway looking into the street. Presently a man passed by and greeted him. He replied by a sign only, lest his wife might overhear. Another passed and greeted him. He answered in a whisper for fear lest his wife should be behind the door, or on the top of the roof, and overhear him. Next came a barber and he put his mirror into the Ḥājī's hand.[1] The Ḥājī looked in the glass and returned it to the barber. The barber said, "Shall I shave your head?" The Ḥājī said nothing for fear lest his wife should overhear him. The barber, taking silence for consent, tucked his sheet round the man's neck. The man thought, "If I

[1] *Vide* note 23, page 408.

tell him to remove this sheet as I do not want my head shaved, my wife may overhear and send me to water the sheep. I'd better hold my tongue." The barber shaved the Ḥājī's head and then took out his scissors to trim his beard. Two men began to quarrel in a corner away from the doorway, and the barber's attention was distracted: his scissors and hands worked mechanically while his attention was absorbed in the dispute. When he again turned his attention to his work, he saw that he had quite clipped off one side of the Ḥājī's beard. He saw it was impossible to lengthen the shortened hairs by pulling at them with the tweezers, so he just snipped off the other side. He saw that the Ḥājī was completely disfigured but that he still didn't talk. The barber then applied water[1] to the beard and shaved him clean. Next he took up a bit of charcoal, rubbed it on the brick bench to give it a point, and planted three beauty patches[2] on the Ḥājī's face and handed him the mirror. The Ḥājī looked at himself in the glass and saw that the barber had done his job. He said to himself, "If I move heaven and earth,[3] my beard won't be restored; and if I talk with this barber my wife may be hidden in a corner and overhear me, and order me to go and water the sheep. I'd better say nothing." Accordingly he returned the mirror to the barber.[4] The barber said, "Pay me." He got no answer. He then said to himself, "Certainly this man is dumb; he has no tongue: I'll go into the house and tell his wife I've shaved her man and get my pay." He entered and called out, "Owner of the house,"[5] but got no answer. He entered the room and looked round and saw about five hundred *tūmāns* worth of jewellery hanging on a peg. "I cannot do better," he said, "than take this and be off." So he took up the things and poured them into his barber's sheet and went out again by the door. The Ḥājī thinking the barber had firewood or something of the sort in the sheet, said nothing, for he feared his wife might be in hiding and might overhear and cry out, "You spoke first; go off and water the sheep." As soon as the barber had departed, the wife returned from her neighbour's house and saw (as she imagined) a woman in man's apparel sitting in the doorway. Drawing near she recognised her own husband, beardless and bearing three beauty moles on his face. She fell a-laughing and exclaimed, "Husband, who has put you in this guise?" The man sprang up laughing, and began to skip and clap his hands, and exclaimed, "You spoke first; go and water the sheep." The woman saw her husband was busy clapping his hands and that he paid no attention to her. So she went into the house and entered the room, and saw that her jewellery had gone. With pale face and streaming eyes she ran to her husband and said, "Oh husband! I'll water the sheep but tell me who has carried off the jewellery?" He answered, "When you went out I came and sat myself in the doorway. A barber came and made me like this. He went into the house: he has carried off your jewellery. I thought he was carrying off bits of wood

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[1] *Vide* note 6, page 409.

[2] Ladies manufacture these patches from the soot of olive or castor oil, and then apply them with a bodkin.

[3] *Lit.* "If I stitch the earth and the sky."

[4] Returning the mirror is the customary sign that operations are finished and that the customer has no improvement to suggest.

[5] A usual cry to inform any inmate that someone is at the door. The barber of course knew that the owner was the man outside,

and said nothing for fear lest you might be somewhere and overhear me and tell me to go and water the sheep." The woman burst out crying and hurried off after the barber, and tracked him as far as the city gate. Let us leave the woman at the gate while I tell you a few words about the barber.

The barber chap[1] thought to himself, "As I have carried off the things I had better not remain in the district, otherwise I will be taken and imprisoned. To avoid this I'll go to Tehran. I'll sell the jewellery, take a wife and start a little business for myself in Tehran." He started off and walked till he arrived at a tea stall.[2] There he sat down to smoke and refresh himself. The woman then came along and saw the barber chap seated at the stall, smoking. She said to herself, "If I merely take back my property and return, I shall exhibit no smartness or skill. I must play some trick and bring such a misfortune on him that my name shall live in story books." She made a circuit and went and sat down on the roadside on the far side of the stall.

The barber finished smoking and got up and continued on his way. He saw an indistinct outline far ahead of him on the road. The nearer he got to it, the more shape it took, till at last he recognised it as a woman seated by the wayside. The woman greeted the barber. The barber returned the greeting and said, "Sister! what are you doing in this desolate spot?" She said, "Brother! my story is a long one." The barber sat down and said, "Tell me your story."

The woman related, "Know then and be aware that last year a soldier came to Tehran and asked me in marriage from my father. My father gave me to him and the soldier took me off with him to Khwabjān. For one year we were man and wife. After one year he departed from this world. He had no father, no mother, no kith, no kin—not a friend, not a relation in the world. Since then, alone and forlorn, I have dwelt in Khwabjān. I thought I would return to my native town, Tehran, and so started on foot. When I came as far as this, I felt tired and sat down to rest."

Whilst she was talking she withdrew her veil and the eyes of the barber saw her face. He fell madly in love with her.[3] He seized the girl's skirt and twisted it round his hand saying, "Oh girl! know and be aware that I have fallen in love with your beauty. One of three things you must do." He then emptied out the jewellery before her and said, "This belongs to my sister; to-day I quarrelled with her; so I carried off her things to take them with me to Tehran. By trade I am a barber." He also showed her the implements of his trade and said, "Either be my wife and I'll give you this jewellery and a *pālkī*[4] for you to Tehran—this is one alternative: or else repeat the formula and become my adopted sister so that up to Tehran I may see your face:[5] or get up and let us go to that stage where I'll engage a riding animal for you up to Tehran, and when we get to Tehran you shall return all I have given to you."

The woman out of the knavery and gullery of her nature fell to weeping. "Oh

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[1] *Dāllakū*, diminutive for contempt.

[2] *Vide* page 410, note 3.

[3] *Lit.* The 666 veins of the kingdom of his body were wound up: *vide* note 10, page 410.

[4] *Vide* note 13, page 410.

[5] *Vide* note 14, page 140.

man," said she, "if you marry me I will be your handmaid, and as long as I live I will be obedient to you. I wish to be your wife."

The barber fellow[1] was delighted. He took the woman with him and they began to journey towards the *kāravānsarā*. They arrived there when the sun set and the air had turned cold. The barber went into the stable and occupied a place. He then took the woman and gave her a place on the top of the platform.

As the woman had become very thirsty she got up and went out of the stable. She went under the gateway of the *kāravānsarā* to the stall of a green-grocer, and bought some *par-i ālū*[2] and mixing it with water ate a large quantity.

By chance a Turk turned up. As soon as the Turkish fellow[3] drew near, the barber cried out, "I have my wife with me: go and take your place on the platform opposite." The Turkish fellow went and got a place on another platform and, sitting down, ate his dinner and being tired fell asleep.

The barber said to the woman, "If to-morrow the *Ākhūnd*[4] comes to tie the knot for us—tell me your name that I may know what to say." The girl hung her head and began to cry and said, "My father and mother gave me *such* a bad name; I'm ashamed to tell it to you." The barber said, "Tell me, whatever it may be: don't be ashamed." She said, "Man! in childhood I was unable to contain myself and used always to defile my clothes. Consequently I was called *Rīdam Khānum*.[5] The barber said, "Very well; Rīdam Khānum is a sort of name." They then sat together conversing a little. In about quarter of an hour he said, "Get up and let us go to bed." The woman replied, "Well, speak low that the Turk may not hear us." Saying this she slipped away and hid in the dark. The barber called softly, "Rīdam!"[5] A second time he called "Rīdam"! A third time he called louder, "Oh Rīdam!" The Turk woke up and shouted out, "*Kupek ughlī*, son of a dog! Not here, I won't endure it." The barber became still.

The woman then came forward and whispered to the barber, "Man, why did you call me and awake the Turk? I had merely left the room for a minute." They then began to amuse themselves together till the Turk went to sleep.

Again the woman got up and slipped off and hid in the dark. The barber felt the ground in all directions, but could not find her. So again he called out "Rīdam Khānum." The Turk woke up and threw a stone at the barber and began to curse him, "May the grave of both you and the Khānum be burnt! If you are a blind man, get up and I'll guide you outside, and bring you back." Again the barber became silent.

The woman came forward and seizing the barber's skirt whispered, "Oh barber! for the sake of God, don't make such a noise. Do you want us both to be killed? Why do you make such a noise? Get up and spread your *'abā* and let us go to sleep."

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1 *Dallākū*, dim. for contempt.

2 I don't know exactly what *par-i-ālū* is. Her reason for eating this is explained by her subsequent behaviour.

3 *Turka*, dim. for contempt.

4 *Ākhūnd* is a lesser *mullā* that performs religious ceremonies but seldom preaches.

5 *Rīdam* = cacavi.

As soon as the barber got up, the woman said to him, "I'm just going out for a little; I'll return in a moment."

She went to the bedside of the Turk and lifted up his big hat, his long boots and his sword and carried them outside. After defiling them she returned the articles to the Turk's bedside and went to the barber and engaged him in amorous play. Suddenly she slipped away and hid.

The barber began to call out, time after time, "Rīdam Khānum, may I be thy sacrifice! Where hast thou gone?" The Turk, awakened for the third time that evening, thoroughly lost his temper. He jumped up, seized his *kulāh* and found it filthy. He put on his long boots and found them filthy. He seized his sword and found the handle had been defiled. In a passion he ran to the platform where the barber was and with a blow severed the man's neck.

The woman leapt down into the middle of the stable and seizing the barber's head began to press it to her bosom and weep false tears, sobbing out in feigned grief, "My brother! my brother!" All the people in the *kāravānsarā*, young and old, lit their lamps and crowded into the middle of the stable. They saw a woman weeping copiously. "Oh woman," said they, "what has happened to you?" "My brother was sick," she said, "and he could not contain himself till he got outside * * * * so this Turk killed him." The people attacked the Turk and seized and bound him and kept him till the morning.

In the morning they brought the Turk. In his saddle bags were two hundred *tūmāns* which they gave, with the horse, to the woman as blood-money.[1] She then went and brought six yards of longcloth and consigned the body of the barber to the earth. Taking the barber's belongings and her own jewellery she put them in saddle-bags and put the saddle bags on the horse and mounted and began to journey to Khwābjān.

When she arrived she saw Ḥājī still sitting and saying, "You spoke first. Come, go and water the sheep." The woman came, drew a bucket of water and gave it to the sheep. Then turning to her husband she said, "Oh husband! all for the sake of one bucket of water you have lost your beard and the barber has been killed, and I have got a horse and two hundred *tūmāns* together with the goods of the barber."—And now farewell, my tale is told.

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[1] Blood-money for a free Muslim (man) is 10,000 dirhams of silver or 1,000 dīnārs of gold.

I.

حکایت 'یاد است' [1]

در بندر عباس تاجری بود بسیار دانا * پسری داشت خواجه ابراهیم نام، جوان، جاهل [2]، پُر شهوت * کتابی در باب حیل زنان عباسی ترتیب داده بود ؛ میخواست بران بیافزاید تا مکمّل شود لهذا روزی به پدر گفت "ای پدر! میخواهم سمت کرمون [3] بروم و سیاحتی بنمایم" * پدر باو گفت که " ای فرزند! زنهای دارد کرمون که زردهٔ تخم را از میان سفیده میزنند " * پسر گفت " ای پدر! خاطر جمع باش * تدارکم بگیر تا بروم " * پدر تدارک پسرش را گرفت * چهار نفر تاجر کامل حاضر بودند ؛ دست پسرش را بدست آنها گذارد [4] و بآنها سپرد که " از پسر من منفک نشوید، علی الخصوص در شهر کرمون [3] که زنهای پُر مکر دارد " * آنها گفتند " خاطر جمع باشید " * بار و متاع خود را گرفتند و از عباسی بیرون آمدند تا بعد از چند روز بشهر کرمون رسیدند * خواجه ابراهیم در سفر هر کجا میخواست برود باطلاع تجّار میرفت ؛ نمیگذاردند تنها برود * بار و متاع را به کاروانسرا ریختند و رفتند حموم [5] * آنها را در حموم داشته باشید و چند کلمه بشنوید از زن خواجه سعید تاجر *

شب در خانه با شوهر شوم [6] میخورد، جناغی از روی قاب طعام برداشت و رویش را بشوهر کرده گفت " جناغ [7] میشکنیم سرِ دل بخواه [8] ؟ " شوهره قبول کرد و شب جناغ شکستند *

صبح شوهر برخاست و رفت رو بحجرهٔ [9] خود * زن نگاه به پاشنهٔ پای [10] خود کرده هزار مکرِ مادری بیادش آمد و با خود گفت " امروز باید جناغ را از شوهر خودم به برم " * چادر مکاری بر سر کرد، از درِ خانه بیرون آمد، وارد بازار شد * از قضا گذارش بدرِ حمام افتاد، در وقتیکه خواجه ابراهیم با تجّار از حمام بیرون می آمد * از بشره اش فهمید که این جوان سفت زن [11] خوبیست * زن گوشهٔ چشم را به خواجه ابراهیم نمود * خواجه ابراهیم تا چشمش به زن افتاد عنان اختیار از دستش رفت * از نظر تجّار خود را در برده پشت سر ضعیفه بنا کرد به آمدن * ضعیفه رسید بدر خانهٔ خود، داخل خانه گردید * خواجه ابراهیم پشت در خانه ایستاد * چون بهانهٔ ندارد که داخل خانه شود، آمد لب جوب آب نشست و کتاب خود را از زیر بغل در آورده باز کرد و بنا کرد بخواندن * ضعیفه آمد روی پشت بوم [12]، چشمش افتاد بخواجه ابراهیم : دید همان جوانی که بر در حموم دیده بود نشسته است * از روی پشت بوم صدا زد که " ای جوان! این کتاب چیست که در دست داری " ؟ خواجه ابراهیم گفت که "این کتاب مکرِ زنون [13] است که من نوشته ام " * ضعیفه گفت " اوی برخیز بیا تا من مکر زنون بیشتر از کتاب بتو بنمایم و بیاموزم " *

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1 *Yād ast* or *janāgh shikastan ; vide* note 3, page 2.

2 *Jāhil* = inexperienced and hence young.

3 *Kirmān.*

4 Or *guzāsht.* The action would probably be accompanied by the words "*Pisaram rā bi-shumā sipurdam va shumā rā bi-Khudā.*"

5 *Ḥammām.*

6 *Shām.*

7 *Janāgh*, "merry thought," *vide* note 3, page 376.

8 *Sar* is here a preposition : *dil bi-khwāh*, "anything you like," *i.e.*, the forfeit to be fixed by the winner.

9 *Ḥujra*, i.e., his office or shop in the *kāravān-sarā.*

10 The deceit of women lies hidden in their heels. By studying her heel the lady has an inspiration.

11 سفت زن اصطلاح پست است بمعني شديد النكاح

12 *Bām.* 13 *Zanān.*

خواجه ابراهیم از خدا میخواست [1] * وارد خانه شد * آمد توی تالار[2] ، نشست * ضعیفه برخاست مجلسی از برای پسر آراست[3] و نشست با او ، و بشراب خوردن مشغول شد * خواجه ابراهیم دو بیتی خواند و جامی سر[4] کشید ؛ دست بگردن ضعیفه در آورد ؛ چند بوسه از صورت[5] زن برداشت * در این بین صدائی [6] از در خانه بلند شد * ضعیفه از توی تالار صدا زد که "کیست کوبندهٔ در" ؟ شوهر فریاد زد "برخیز در را وا کن" * تا صدای شوهر بلند شد خواجه ابراهیم به زن گفت "کیست پشت در" ؟ زن گفت "شوهرم" * رنگ از رخسار خواجه ابراهیم پرید : دو دستی دامن زنرا گرفت و گفت که " من دخیل تو هستم ، من غریبم ! اگر شوهرت مرا به بیند بقتل میرساند * یکجائی مرا قایم کن[7] " * زن برخاست ، در صندوقی را واز کرد ؛ بقچهای رختیکه در صندوق داشت در آورد ، و گفت " ای جوان ! برخیز ، برو میان صندوق ؛ شوهر من می آید نهار میخورد و میرود * دوباره ترا بیرون می آورم " * خواجه ابراهیم از ترس جان خود برخاست ، رفت میان صندوق * زن در صندوق را بست و قفل زد و آمد ، در خانه را باز کرد *

شوهر وارد خانه شد ؛ دید زن مجلس آراسته است و لباس خود را تغییر داده * پرسید " ای زن ! مجلس برای که ترتیب دادهٔ " ؟ گفت " ای مرد ! مهمان داشتم" * گفت " مهمان تو که بود ؟ زن گفت "صبح رفتم در بازار ، جوانی دیدم بسیار پاکیزه ، گوشهٔ روی خود را باو نشان دادم و آمدم در خانه * بعد از ساعتی رفتم روی پشت بوم ، دیدم همان جوان لب جو نشسته ؛ او را طلبیدم در خانه * این مجلس را برای او چیدم و چند جام[8] شراب هم خوردیم و چند بوسه هم از روی من برداشت * همچنانیکه دستش به بند شلوارم رسید شما با جلال تمام تشریف آوردید و در را زدید * آن پسر التماس زیاد بمن کرد که 'غریب هستم ؛ یکجائی مرا پنهان کن که شوهرت مرا نه بیند' * من هم گفتم 'اگر در طویله او را قایم کنم فرار میکند' ؛ او را کردم میان این صندوق و در او را قاف [9] کردم * دیگر شوهر من شما هستید ؛ او را میکشید خود دانید ؛ می‌بخشید اختیار دارید" * تاجر از غیض صورتش بر افروخته شد * داد زد گفت " برخیز قمهٔ مرا بیار تا سرش ، را از تن جدا کنم " * ضعیفه قمه را آورد ، مقابل مرد گذارد * مرد گفت "کلید صندوق کو"؟ زن دست کرد زیر فرش ، و کلید را دست شوهر داد * همچنانیکه کلید را گرفت زن گفت "مرا یاد و شما را فراموش" [10] و بنا کرد بپلنگ [13] زدن و رقصیدن * آن تاجر بخیال اینکه زن اینمقدّمه را برای بردن جناغ چیده ، کلید را به زمین زد ؛ و عبای خود را بر دوش کشید [11] و سر از خانه بیرون زد * زن دم پنجره دوید ، از عقب سر صدا زد " ای دلم چیزی کم از تو قبول نمیکنم " *

زن در صندوق را باز کرد ، دید پسره از هوش رفته * او را از میان صندوق بیرون آورد : قدری گلاب بروی او زد و به هوش آورد * بنا کرد دور تالار نگاه کردن : گفت " شوهرت چه شد ؟ من هرچه دارم بتو میدهم ؛ مرا ازین خانه زنده بیرون کن " * زن گفت " ای جوان ! مگر ترا چه حال روی داده ؟ من صحبت با شوهرم داشتم ، تو چرا ترسیدی" ؟ جوان گفت" ازین حرفهای تو با شوهرت من از هوش رفتم" * زن گفت این همه حیله بود تا شوهر را از خانه بیرون کنم که با تو بنشینم " * خواجه ابراهیم گفت " ای زن ! چه بتو بدهم که بگذاری که بسلامت از خانه بیرون بروم " ؟ زن گفت " صد تومان قبض [12] بنویس ، بمن بده ، تا ترا بسلامت بیرون کنم * بعد من

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1 *Az Khudā mī-khwāst*, "this was just what be was longing for." 2 Or *tālār*.
3 *Majlis ārāstan*, "to lay the table, set ready a repast *with wine*." 4 *Sar kashīdan*, "to drain a glass."
5 *Ṣūrat*, "face:" *bar dāsht* or *zad*. 6 *Ṣadā-ī*, i.e., of knocking, not "calling." 7 *Qāyim k.* "to conceal."
8 *Chand jām sharāb* or *chand jām-i-sharāb*. 9 *Qulaf*, vulg. for *qufl*. 10 Or simply '*yād ast*' is said.
11 "Put on." 12 *Qabz*, "promissory note." 13 *Pilingak z.*, m.c. snapping the fingers Persian fashion.

مي آيم در حجره ، و پول را مي سونم[1] " * خواجه ابراهيم قبول كرد و قبض نوشت ، مهر كرد و بدست زن داد و از خانه بيرون آمد * وارد كاروانسرا شد *

رفقا كه چشمشان به خواجه ابراهيم افتاد او را مضطرب حال ديدند * يكى از ايشان كه بسيار زرنگ بود گفت " خواجه ابراهيم ! خيرست ؟ كجا رفتي؟ راست بگو " * خواجه ابراهيم تفصيل را از اول تا آخر براى شان نقل كرد * يكى از رفقايش گفت " اى خواجه ابراهيم ! اگر ضعيفه آمد و قبض را آورد ، با او تو هيچ گفتگو نكن ، و صد تومون را به او بسپار * اگر من فردا صد تومون را برضامندي زن با سيصد تومون ديگر نگرفتم ، مرد در روزگار نيستم " * درين صحبت بودند كه زن وارد كاروانسرا شد * خواجه ابراهيم برخاست ، كيسهٔ صد تومونى را بدست زن داد و قبض خود را گرفت * زن خرّم و خشنود مراجعت كرد *

فردا صبح كه شد ، رفيق خواجه ابراهيم گفت " بر خيز و خانهٔ آن زن را بمن نشون[2] بده " * خواجه ابراهيم با رفيق خود بدرِ خونه آمدند * خواجه ابراهيم گوشهٔ پنهون[3] شد * رفيق اش در كوبيد * كنيزى آمد پشت در * در را كه باز كرد ديد تاجريست * كنيز گفت "چه ميخواهي"؟ گفت "بخانم عرض كن تاجريست ، عرضي دارد " * كنيز بخانم خود عرض كرد * خانم چادر بسر كرده عقب در آمد * تاجر سلام به زن كرد و گفت " اى زن ! وصف جمال شما را ديروز از رفيق خود شنيدم ، و اين صد تومون را آوردم[4] كه صورت شما را به بينم ، و مرخّص شوم " * زن صد تومون را گرفت و روى خود را باو نشون داد * تاجر و خواجه ابراهيم به كاروانسرا آمدند *

صد تومون ديگر برداشتند و باز به در آن خانه آمدند ، دق الباب كردند * زن عقب در آمد و در را باز كرد * تاجر گفت " من همونم كه صد تومون دادم ، روى شما را ديدم * صد تومون ديگر دارم و دو بوسه از روى شما ميخواهم " * زن پيش خود خيال كرد "چه مداخلى بهتر ازين است " ؟ صد تومون را گرفت و دو بوسه به تاجر داد * تاجر با خواجه ابراهيم برگشته صد تومون ديگر برداشتند ، آمدند ، دق الباب كردند * زن عقب در آمد * خواجه ابراهيم توى دالون پنهان شد كه زن او را نه بيند * تاجر داخل خانه شد و گفت " من همانم كه صد تومون دادم ، روى شما را ديدم ، و صد تومون دادم دو بوسه گرفتم * صد تومون ديگر دارم ، ميدهم و قدرى در مالي ميكنم * زن گفت " چه ضرر دارد " ؟ پول را گرفت ، داخل اطاق شد ، رخت خواب انداخت *

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تاجر گفت " نمي شود " كه يک مرتبه از توى دالون خواجه ابراهيم فرياد زد كه " اى رفيق ! چه مداخلى ازين بهتر است ؟ اگر تو نميتواني بكني بر خيز تا من كنم ، و پولها را گرفته بروم " * تاجر داخل كرد و برخاسته ششصد تومون پول را از زن گرفت و از خانه بيرون آمد * وارد كاروانسرا شدند * اين زن لذّتى از تاجر يافته صبح ديگر چادر كرد و در كاروانسرا آمد * رفيق خواجه ابراهيم بنا كرد بفحش دادن بآن زن ، گفت كه " پيشت خيال كردي كه ' من مكّارم ؟ رفيق مرا در صندوق كردي و صد تومون از او گرفتي كه خود را صاحب مكر و حيله بداني ؟ ندانستي كه از خودت مكّار ترى هم هست " ؟ زن فهميد كه اين كار پسر تاجر بود * برگشت

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[1] *Mī-sūnam*, vulg. for *mī-sitānam*. [2] *Nishān*. [3] *Pinhān*.
[4] *Āvurdam*, colloq. for *Āvurda am*.

بخانهٔ خود * تجّار هم بار و متاع گرفته از شهر کرمون بیرون رفته به نرد پدر خواجه ابراهیم رسیدند * تفصیل را عرض کردند * پدر رویش را بفرزند خود کرد و گفت " ای فرزند ! بتو نگفتم که در کرمون زن مکّار بسیار است ؟ تو قبول نکردي * اگر رفقاء همراه تو نبودند ، یا در میان صندوق مرده بودي و یا مایهٔ خود را تمام کرده بودي " * پس پسر فهمید که از مکر زنان مرد هرچه عاقل باشد باز هم ناشیست * بیدماغ شده کتاب را شست و انداخت دور — و السلام نامه تمام *

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II.

حکایت سه رفیق

سه نفر دست رفاقت بهم دادند تا جائی رفته نقشی به زنند [1] و نونی پیدا کنند * یکی بود کوسه ، یکی کچل ، و یکی تریاکي * هر سه وارد اصفهون شدند * قرعه انداختند به بینند که اول که باید دست بکار شود * از قضا قرعه بنام کچل افتاد که امروز او برود نقشی بزند ، و تنخواهی بدست آرد * آمد بیرون ، رسید دم دکان آشپزی ، ایستاد و فکری کرد * دید از دنیا جیفهٔ هم مالک نیست [2] * بدل خود گفت " میرم یک شکم سیر میخورم ؛ منتهاش کتکي سیری خواهندم زد " * سر زده داخل دکان شد * به شاگرد آشپز صدا زد گفت " اوی برو فلون فلون [3] خورش را برایم بیار " * با خود خیال کرد و گفت " حالا کتکو [4] را که میخورم بگذار شکم سیری هم بخورم " * آستینش را زد بالا ، و آسوده نشست و خورد * وقتیکه فارغ شد اُسّا [5] آمد پولش را خواست * کچلو [6] بنا کرد این سو و آنسو نگاه کردن ؛ چشمش افتاد به صندوق دخل : دید یک [7] دونه اشرفي افتاده * گفت " ایمرد حالا مگر نه اشرفي بتو دادم ؟ باقي پولم را مستردّ کن * آمدي مرا نقش بزني ؟ " اسّا دید که هوای کار [8] بد است * دست کرد تو یخهٔ [9] کچل ، بیخ گلویش را گرفت ؛ برد نزدیک دیوار و سرش را بدیوار کوبید * سر کچل شکست * همینکه این حالتو [10] را کچل دید ، بنای مرده بازي [11] در آورد * فریاد زد " ای داد ! ای بیداد ! مرا کشتند ؛ لختمون کردند " * از قضا داروغهٔ شهر آمد ازانجا بگذرد * چون این اوضاع را دید پرسید " چه خبر است ؟ چه رو داده ؟ " کچل انداخت خود را جلو ؛ گفت " ای آغا ! شکمی خوردم ، یک دونه اشرفي دادم ، باقي پولم را میخواهم * مردکهٔ اُسّا زده سرمرا شکنده * الان در صندوق دخلش است " * داروغه اسّا را فوراً گرفت و یک کشیده بیخ گوشش خوابوند [12] * گفت " پدر نامرد [13] اشرفي مردم را میگیري ، کتکش هم میزني ؟ " داروغه رو کرد به کچل ؛ گفت " آنچه خوردي پولش را نده ؛ آن عوض کتکت باشد : اینست اشرفي ، بگیر و راهت را بکش " * کچل زودکی [14] اشرفي را ور داشته از نظر ایشان کافور شد * آمد نزد رفقا ؛ اشرفي را انداخت جلو ؛ گفت " ای بابا سگها ! اینست مداخلِ من ؛ صبا نوبهٔ شماست ، باید بروید نقشی بزنید " *

روز دیگر قرعه باسم تریاکي افتاد * راضي شد که صبا او برود و نقشی بزند * تریاکي صبح از خواب بیدار شد : گفت " خدایا ! چه شیوهٔ [15] بزنم که وجهی پیدا کنم تا رفقا مرا بد نگویند ؟ " عبا بدوش انداخته آمد بیرون ؛

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1 *Naqsh zadan*, "to play a trick, to do a swindle." 2 *Jīfa*, lit. "dead body": 'he saw he owned nothing at all.'
3 *Fulān*. 4 *Kutakū*, dimin. is merely vulgar. 5 *Ussā*, vulg. for *ustād*.
6 *Kachalū*, dimin. for contempt; "the scald-head fellow." 7 *Dāna*. 8 *Havā-yi kār*, "aspect of affairs."
9 *Tū yakha* for *tū-yi yakha*. 10 *Ḥālatū*, vulg. for *ḥālat*. 11 *Murda bāzī* in m.c. means shamming being badly hurt.
12 *Kashīda*, "slap": *Khwābūnd* for *khwābānd*.
13 *Pidar-nāmard*, means 'son of an impotent father' and hence 'bastard.'
14 *Zūdakī*, vulg. for *zūd*. 15 *Chi shīva-ī bi-zanam?* "what art must I use?"

تو این کوچه و آن کوچه میگردید تا رسید بیک زنی * زن ازو پرسید " ای مرد ! مگر تو غریبي " ؟ گفت " بلی باجي [1] ، غریبم ، نا بلدم " * گفت " مي آئي خونهٔ قاضي طلاقم بدهي ؟ ده تومونت میدهم " * گفت " باجي ! بسر و چشم ؛ بسم الله ؛ تو بیافت جلو ، من از عقب مي آیم " * برای پول همپای زن بخونهٔ قاضي رفت * داخل خونهٔ قاضي که شد ، دید آقای قاضي با ریش گپه [2] و عمامهٔ گنده نشسته برای خودش مطالعه میکند [3] * تریاکي سلامی داد گفت " ای قاضي این زنِ من است ؛ او را نمیخواهم * برایم طلاق بخوان " * قاضي گفت " ای مرد ! چرا این زن را طلاق میگوئي " ؟ گفت " این زن ، دیگر بدردم دوا نیست [4] * بی اذن من از خانه بیرون میرود ، و زنیکه بی اذن شوهر حرکت کند بهیچ درد دوا نیست " * قاضي دید لابد [5] است : صیغهٔ طلاق را جاري کرد * وقتیکه طلاق شد ، زن مرد را کنار طلبید ، از بغل خود بچهٔ بیرون کشید و گفت " ای مرد ! ایرا بسون [6] تا بیایم بیرون ، و پولت را بدهم " * تریاکي بچّه را بغل گرفته آمد دمِ کوچه ، [7] منتظر زن ایستاد * چون دید زن پیدایش نیست تا بچهٔ خود را رها کند ، رفت بخانهٔ قاضي گفت " ای قاضي ! زنیکه من طلاق دادم کجا رفت " ؟ قاضي گفت " ای مردکه ! تو طلاقش دادي ، من چه میدانم کجا رفت ؟ تو جایش را بلدي ؛ برو عقبش " * حالا بچّه تو بغل تریاکي ؛ خودش گرسنه ؛ بچه هم گرسنه ؛ در کوچها میگردد * گاهی از بچّه میپرسد " بابات کیه [8] " ؟ گاهی میگوید "مادرت کجا ست که به بخت من افتادي " ؟ آخر بخود خیال کرد که " یک گوشه بگذارم و فرار کنم " * آمد در یک مسجد خرابهٔ * از قضا درین مسجد روز پیش هم کسی یک بچهٔ گذاشته رفته بود ، لهذا خادم کشیک میکشید * دید یک کسی یواشکی آمده بچّهٔ را از زیر عبا بیرون آورده گذاشت و بنا کرد بتعجیل رفتن * خادم دوید عقبش ؛ فریاد بر کشید " ای پدر - سوخته ! تو از کجا بچّهای بی صاحب را مي‌آري و اینجا میگذاري و میروي ؟ " گرفت و یک کتک پر زوري زد * او [9] بچّهٔ دیروزی و امروزی را گذاشت تو بغلش ، دو تا پس گردنی زده گفت " زن قحبه برو ، دیگر اینجا نه بیفمت ها " * حالا تریاکي دو بچّه تو بغل ، میگردد کوچها * بچّها را هی میزند و میگوید " ای بابا سوختها ! شما امروز دو چارِ من شدید ، بلا بر سرم آوردید ؟ " * رسید به پشت یک حمّام - خرابهٔ [10] ، بچها را زمین گذاشت و بنا کرد بدویدن * شخصی در گوشهٔ بود ، این را دید و فریاد بر کشید " ای پدر سگ ! مادر بخطا [11] این بچّها را از کجا آوردي و اینجا گذاشتي ؟ " دوید عقبش * این مرد از عقب ، تریاکي از جلو ، هي [12] میدوند * تریاکي دید ، یک خانه درش واز است * سر زده داخل شد که قایم شود * چون رفت داخل ، دید پلّهٔ است * از ترس جان رفت بالای پلّه و میان پلّه نشست * بخود میگوید " ای خدا ! حالا مي آیند باز بچّها را میگذارند تو بغلم " * دید کسی در میزند * گفت " واویلا که رسیدند ! نمیدانم چه خاکی بر سر بریزم ؛ * کجا در رم " * دید کنیزی آمد پس در ، و در را کشود * جوانی آراسته باو گفت " برو ، به بی بیت بگو فلان کس است که ترا فلانجا دیده و وعده کرده بود ، آمده است " * چون به بي بي کنیزک خبر داد بي بي گفت " به برش بالا ، تا من بیایم " * کنیزک آمد بمرد گفت " تشریف به برید تو این بالا [13] ؛ بي بي ام مي آید " * چون تریاکي دید که آنمرد پلّه گرفته بالا مي آید [14] گریخت ؛ رفت تو پس تو [15] و خود را قایم کرد * آن جوان آمد بالا * بعد از دو دقیقه دید

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1 *Bājī* T. "sister." 2 *Rīsh-i gapa*, "thick beard." 3 "Reading to himself."
4 *Bi-dard-am davā nīst* = *bi-dard-am namī-khurad*.
5 *Lābud ast*, "the matter admits of no alternative." As a rule the *Qāẓī* tries to dissuade a man from divorcing his wife.
6 *Irā bi-sūn*, vulg. for *īn rā bi-sitān*. 7 *Dam-i-kūcha*, the end of the street.
8 *Kīya*, vulg. for *ki ast ?* 9 *Ū* = *ān*. 10 *Ḥammām-kharāba-ī*.
11 *Mādar bi-khaṭā* = 'you are not the son of your father.' 12 *Hay*, continuative particle.
13 *Bālā*, m.c. for *bālā-khāna*. 14 *Pilla girifta bālā mī-āyad*, 'is beginning to climb the stairs.'
15 *Past-tū* is a 'back room.'

یکی زن خود را ساخته بالا آمد * هردو رفتند تو ، و هم بغل شدند ، ماچها گرفتند * زن آهسته دستش را کرد تو تنبون مرد * مرد سر شهوت اُفتاد نشست میان دو رون زن و مشغول کار شد * تریاکي از پس در که این اوضاع را دید نفسش[1] حرکت کرد * درین بین که مشغول اند بکار کردن ، شوهر ضعیفه آمد * کنیز راه مي پائید [2] که هر کس بیآید بي بي را خبر کند * دوید ، آمد ، گفت " ای بي بي ! دخیل [3] که آغا آمد " * بي بي دست پاچه برخاست گفت " ای رفیق ! برو تو آن پس تو و پنهان شو " * چون تریاکي این را شنید فوري خودش را کرد داخل یکی از دو تاپو [4] که آنجا بود ، رفیق ضعیفه هم دوید آمد در تاپوی دیگر ، قایم شد * شوهر ضعیفه آمد بالا ، گفت " ای زن ! اینجا چه میکردي " ؟ گفت " جا را میرفتم ، پاک و پاکیزه میکردم * چه کنم - این ددهٔ [5] کارها را که درست متوجه نمیشود " * ددهٔ گفت " ای آقا ! تو نمیداني بي‌بیم چه کارها که نمیکند ، چه زحمت ها که نمیکشد " * مرد گفت بارهای آرد آورده‌ام ، بکن تو این تاپوها * زن گفت که " این تاپو خراب وشکسته است ، موش هم درین مرده بود : آردها [6] بریز تو آن تاپو " * (ضعیفه میداند که رفیقش تو این تاپوست) * ددهٔ و بي بي هر دو کیسهای آرد را گرفته بردند سر آن تاپو ، خالي کردند * مردکهٔ تریاکي دم پوزش [7] گرفته ، هي میگیرد آردها را میچپاند [8] ، هي اینها ریختند ، هي تریاکي چاپید * یکدفعه تاپو پکید [9] و بد بخت تریاکي سفید از میان آردها درآمد * اول خیال کردند که این جنّ است * همه ماتشان گرفت [10] * شوهر پرسید " ای مردکهٔ الدنگ [11] ! تو اینجا کجا آمدي ؟ چه کار داري " ؟ مردکه گفت " همپای آغایم آمدم " * " آغات کدام سگ است ؟ " گفت " توی آن تاپو " * حالا ضعیفه سیل میکند * شوهرش کلنگی برداشت ، زد تو قد تاپو * دید یک نره خر دیگر از توي تاپو بر آمد * شوهر گفت " اي فلون فلون شده ! تو دیگر از کجا آمدي " ؟ رفیقو گفت " راه را گم کردم ، آمدم ، داخل خانه شدم تا کسی راهم بلد کند [12] * شما از عقب رسیدید * از ترس آمدم اینجا ، پناه جستم " * شوهر و رفیق ضعیفه چسپیدند به یال [13] و یخهٔ همدیگر ، و میانشان کتک کاري در گرفت * تریاکي درین شلغ از میان گریخت ، آمد بیرون ، آردها را تکان داد ، گفت " خدایا ! امروز عجب رزقی بمن دادي " * آمد از کوچه عبور کند ، بوي نون شیرین [14] شنید * از زور گشنگي گفت " برم ، داخل خونه شوم ، اگر کتکم زدند به خایهٔ رندان [15] ، نونیکه گیرم خواهد آمد * رفت داخل * دید زنی نشسته ، جوانی هم پهلویش : هم بوس و کنار میکند و هم ضعیفـــه نون مي پزد * رفیق زن گفت " مردکهٔ خر ! بی اذن داخل خانهٔ مردم مي شوي ؟ گم شو ورنه حالا کلّه ات را خُرد میکنم " * درین بین شوهر ضعیفه داخل شد ، گفت " آري ، چه خوش ! بمن میگویند که زنت کُسّواست [16] ، من باور نمیکردم * حالا بر من این مطلب ثابت شد * اوي لکاته ! نون شیرین برای که مي پزي ؟ حالا فهمیدم تو رفیق داري " * زن گفت "برای این بد بخت غریبها که از راه آمده کسیرا ندارند " * تریاکی هم ، چشمش بر آن نونها دوخته بود و میخواست از میان در برد * گفت " ای مرد ! عجب زن نجیبي داري داغش [17] را نه بیني " * این را گفته بنا کرد نونها را جمع کردن * ضعیفه اشاره کرد " کجا میبري ؟ " تریاکي باشاره گفت " خاموش همین جا میگذارم تا شوهرت برود " * نونها را زیر بغل نهاده آهسته

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1 *Nafas = āla-yi tanāsul.* 2 *Rāh pā'idan*, "to keep watch." 3 *Dakhīl* is merely a cry of agitation.
4 *Tāpū*, a huge earthen jar for storing grain. 5 *Dada*, lit. 'a wet-nurse,' is used for any negress.
6 The plural signifies "bags of flour." 7 'Covered his mouth and nostrils with his hand.'
8 *Chapāndan*, "to press down." 9 *Pukīdan*, vulg. for *tarkīdan*. 10 *Māt girīftan*, "to be amazed, etc."
11 *Aldang* (m.c.) "boor, of boorish manners." 12 Show me the way.
13 *Yāl*, "mane," means 'neck and chest.' 14 *Nān-i shīrīn*, a cake of flour, butter, and sugar.
15 *Bi-khāya-yi rindān* = 'I don't care a curse.' 16 *Kussū*, vulg. for *zan-ī ki bisiyār jimā' bi-dihad*.
17 It is a belief that when a loved one dies, a black spot appears in the heart of the mourner. *Dāgh-ash rā na-bīnī*, "may you not see her death."

آهسته پس پا شد تا نزدیک در رسیده گروخت[1] * آمد نزد رفقا گفت " ای نا نجیبها بلاها کشیدم تا این نون‌ها را آوردم * صبا نوبهٔ کوسه " * کوسه گفت " خوب امشو میخوابم ، صبا میگویم چه نقشي باید بزنم " *

صبح کوسه برخاست ، به رفقایش گفت " مرا به برید تخت فولاد[2] * در تابوت بخوابانیدم[3] و یک قدیفهٔ بکشید رویم * یکی بر سر ، ویکی پائین پا ، نشسته هي بر سر و صورت خود بزنید و بنالید ' های بابای غریبم ! های بابای مظلومم[4] ! ' هرکس برسد ضرور چیزی میدهد " * رفقا بگفتهٔ او عمل کردند ، و دیري نشد که پولي فراهم آمد * از قضا یکی از آدمهای حکومت آمد که از آنجا ردّ شود * خوب نگاه کرد دید که مرده از میان تابوت حساب پولها را میکشد ، میگوید برفقاش که " اوی بابا سگها ! چقدر پول جمع کردید ؟ " مرد حکومت گفت " ای حروم لقمه ! مرد نیستم اگر زنده بگورت نه سپارم " * آمد جلو تابوت گفت " از حکومت مأمورم که هر غریبی اینجا بمیرد از دست خودم غسلش دهم ، کفنش نمایم ، و بخاک بسپارم " * رو کرد به آدمهایش گفت "بچّها جنازه را دوش بگیرید" * هرچه کچل و تریاکی التماس‌کردند التجا نمودند که " ای بابا ! پول جمع شده ، ما خود بخاک میسپاریم ، زحمت نکشید ، " آدم حکومت هیچ حرف آنها را گوش نکرد * تابوت را کشید ، برد تو مرده خانه و آنجا آدمها را رخصت کرد * میت را در آورد روی تختهٔ تن شوری خوابانید ، و دم غسل[5] دو سه مشتی زد تو پهلو * گفت " ای پدر نامرد ! تو چه طور مرده هستي که حساب پولها را میکشي ؟ " هرچه او را زد ، همه را خورد و دم نزد * از عقب ، کچل و تریاکی رسیدند * آمدند دم در غسالخانه * داد زدند فریاد کشیدند که " ای بابا ! مردهٔ مارا چه میکنید ؟ ما خود متوجّهٔ کفن و دفن او میشویم " * آدم حکومت برگشت که در را روی آنها به بندد * کوسهٔ افتاده[6] چون پشت مردکه را برگشته دید ، دستي زد تو طشت حلوا ،[7] مشتي گرفت ، گذاشت تو دهن و قوت زد[8] پائین * چون دید که مرده حلوا خورد گفت " خوب ، ای تخم ابلیس ! کارت را حالا درست میکنم " * گرفت ، و تو حوض مرده شوري چپاند زیر آب * کومه وقت یافته دو سه قرط آب[9] هم خورد ، و آسوده خود را بمردگي زد * آدم حکومت دید بد اوضاعي است * گرفت دو سه مشت ولکد زد تو پس دنده اش[10] و گفت " ای مادر بخطا ! عجب مردهٔ هستي : حلوا را خوردي ، او[11] هم زهر مار کردي " * درین بین هوا تاریک شد * حالا آدم حکومت شاگردهایش را هم رخصت کرده نمیداند چه کند * دید صدای فس فسي[12] از پشت دیوار مي آید * گوش فرا داد شنید که میگویند " بریم تو غسالخانه آنجا خلوت است : تنخواه غارت را درمیان خود تقسیم نمائیم " * معلوم کرد که جماعت راه زنانند ، قافلهٔ را چاپیده تنخواهي بغارت آورده اند * آدم حکومت از ترس جون ، خود را توی تابوت انداخت و پهلوی کوسه خوابید * رهزنان آمدند تو * دیدند دو مرده افتاده * آنها را پس کرده نشستند * از قضا شمشیری درمیان اسباب غارت بود * یکی گفت " این شمشیر برای من ، " دیگری گفت که " هرکس این مرده را از شمشیر دو تا کرد ، شمشیر برای او " * سیمي برخاست ، آستینش را زد بالا ، گفت " این کار کار من است : هر دو میت را بیک ضرب دو خواهم کرد " * آدم حکومت حالا آهسته بکوسه که نزدیک تابوت افتاده بود گفت " اوی رفیقو ! خودت هم کشته میشوی مرا هم بکشتن خواهي داد * فکری بکن " * یکدفعه کوسه دستک زنان از تختهٔ تن شور برخاست : فریاد زد " اوی مُردها برخیزید ! بگیرید زندهارا ! " آدم حکومت

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1 *Gurūkht*, vulg. for *gurīkht*.
2 *Takht-i Fulād*, a quarter in Ispahan.
3 *Bi-khwābānīd-am*.
4 *Mazlūm* = "poor, wretched."
5 *Dam-i ghusl*, "at the time of washing."
6 *Uftāda* = lying down.
7 There is always a plate of *halvā* carried along with the bier; the contents of the plate are given to the poor in the graveyard.
8 *Qūt zadan*, "swallow."
9 *Du si qurt āb*, "two or three go-downs of water."
10 *Tū pas-i danda* = simply "in his ribs."
11 *Au* for *āb*.
12 *Fis fis*, "hissing of a snake; noise of whispering.

هم یکدفعه از تابوت جست و فریاد برکشید " بگیرید ! خفه بکنید " ! دزدها چون دیدند مردها برخاستند، همه تنخواه را گذاشته گروختند * بعد دزدها میان خود شان گفتند " مردها که تنخواه را نمیبرند ؛ کسی برود به بیند چه شده " * یکی جلو آمد که " من میروم به بینم که مردها رفته اند یا نه " * کوسه نگاه کرد دید یکشان می آید : رفت پناه در قایم شد * همینکه او سر را گذاشت تو ، به بیند مردها هستند یا رفته اند ، کوسه کلاهش را قپید [1] و به یکی از مردها گفت " اینهم هفت غاز [2] تو " * دزده [3] دوید ؛ بر گشت نزد رفقایش ؛ گفت " اوی یارون ! اینقدر مرده‌ها جمع شده‌اند که هر یکی از غارتمان هفت غاز قسمتشان شده * یکی قسمتش نرسیده بود ؛ کلاه مرا بردند " * همهٔ دزدان دیگر کافور شدند * صبح کوسه به آدم حکومت گفت " بیا ما دوست بشیم و تنخواه را قسمت کنیم " * کوسه قسمت خودش را ورداشته رفت نزد رفقا و حکایت را تعریف کرد — والسلام قصه تمام *

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III.

نقش شیرازي

دو نفر رفیق بودند : وارد اصفهان شدند که نقشي بزنند [4] ؛ و از اهل شیراز بودند * هر کدامي پُنصد تومان پول داشتند * یکي شون [5] با سیصد تومان پول آمد در دکانِ شخص بزّازي ، با او رفیق شد وبصحبت هم در تمدند * آنشخص بزّاز به شاگردش گفت " اسپش را بگیر ، بگردان " * آدمش اسپ و پول را هر دو گرفت و رفت و گم شد * بعد از ساعتي ، آن شخصیکه پول و اسپ را آدمش گرفته بود ، بهانهٔ کرده دکان ورچید ، و راه خود را کشید * آنشخص نو رسیده حیرون و سر گردون ماند * دید زني از حمّام بیرون آمد ؛ سارقچه [6] با خود داشت و بآن شخص که اسپ و پول را گم کرده بود گفت " این سارقچه را با من تا خانه بردار " * آن زن زن صاحب دکان [7] بود * بتعجیل وارد خانه شدند * وقتیکه وارد شدند مجلس [8] چیدند و بغل هم خوابیدند * در حین جماع دکاندار عقب در آمد و در کوفت * جماع نکرده از هم پاشیدند * زن مرد را در حصیري پیچیده در اطاق پهلو گذاشت * صاحب خانه وارد شد ؛ آمد توي تالار * دید ضعیفه پریشون است * پرسید که " ترا چه میشود " ؟ گفت " باکی نیست [9] ؛ فکر خونه - داري هستم " * مرد قلیوني کشیده از خانه بیرون آمد * آن مرد اجنبي آمد و به زن نزدیکي کرد و بخار قلبش را بدر نمود [10] * بعد زن قرار داد صد تومان باو بدهد و یکدست لباس فاخره باو بپوشاند * آنشخص راه براه [11] آمد در دکان بزّاز و سلام کرد ؛ گفت "تو پول مرا گرفتي ؛ حال بما خدا پول رسانده : با فلانه زن که فلان محلّه است قرار گزاردم روزي یکمرتبه بروم و با او جمع شوم ، و از او یکصد تومان و یکدست رخت بگیرم " * بزّاز گفت " اي فلاني اگر فردا رفتي مرا مي‌بري " ؟ گفت "بلي ، بچشم ، مي‌برم ؛ بخالت ندارم " * فردا شد * آمد از در دکان بزّاز عبور کند ؛ گفت " بسم الله پاشید [12] برویم " * این را گفتهٔ رفیق آن زن جلو افتاد * بزّاز تا رفت دکانش را ورچیند ، رفیق زن وارد خانه شد * همین که رفت نزدیکي کند صاحب خانه رسید و دق الباب کرد * مجدداً زن رفیقش را در رخت خواب گذاشت و پیچید * شوهره آمد داخل خانه :

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1 *Qapīdan*, "to snatch away." 2 "This is your share worth seven *ghāz*." Ten *ghāz* = 1 *shāhī* or roughly ½*d*.

3 *Duzda*, dimin. of *duzd*.

4 *Naqsh zadan*, "to play a trick, etc." This story is told by a Shirazi, and the Shirazis hold in contempt the intelligence of the Isphanis.

5 *Yak-ī shūn*, for *yak-ī az īshān*. 6 *Sāruqcha*, "bundle"; (for *sar-buqcha* ?) 7 *Ṣāḥib-dukān*, no izafat.

8 *Majlis chīdan*, 'to spread the table for a feast.' 9 *Bāk-ī nīst*, "there's nothing the matter."

10 *Bukhār-i qalb bi-dar kardan* = *taskīn-i shahvat kardan*.

11 *Rāh bi-rāh raftan*, "to wander; not to go straight." The man was a stranger in the city.

12 *Pā shīd*, vulg. for *pā bi-shavīd*.

آنچه گردش کرد ، رفیقش را نیافت * پریشون از خانه بیرون آمد * آنوقت آنمردیکه که رفیق زن بود برخاست و با زن جماع سیري کرد ؛ باز مبلغ یکصد تومان به رفیق خودش داد و روانه کرد * مرد آمد در دکان و به بزّاز گفت " تو کجا ماندي ؟ من بخانهٔ آن ضعیفه رفتم * شوهرِ فلان فلان شده اش آمد و مرا ندید " * بزّاز او را قسم داد که فردا که میري [1] مرا هم همپایت [2] به بر " * باز فردا شد * آنمرد آمد نزدیک دکان ، و به بزّاز اشاره کرد " بیا پا شو بریم " * این را نموده جلو افتاد * وارد خانه شد ، دید زن برهنه است ، از آب حوض بیرون آمده ؛ و سرینهاي بلورینش مثل آفتاب میدرخشد * نزدیکِ [3] به زن شد ، او را بغل گرفت ، و بوسهٔ چند بر سر و صورتش زد ، و او را خوابانیده شستِ راست [4] او را بوسید* لنگش را تو هوا [5] کرد و مشغول بکار شد * در حین دَخَلَ یَدخُلُ [6] شوهر حلقهٔ در را زد * آن زن از جای خود حرکت کرد و مرد را بغل زده همان طور که خوابیده بود در شیرآویز [7] گذاشت و بالا کشید * شوهرش داخل خانه شد * زن نشاندش زیر شیرآویز ؛ خودش هم نشست * آن مرد اجنبي که رفیقش بود عورتش از زیر شیرآویز معلوم بود * زن خواست که عورت او پنهان شود * دایرهٔ از طاقچه ور داشت و با شوهر بتصنیف خواندن مشغول شد :—

∴ " گُل نشین بالا نشین خایه ات جمع کن و بنشین " [8] ∴

آن مرد اجنبي در حرکت در آمد که خود را جمع کند ؛ بندِ شیرآویز پاره شد * آمد بر سر شوهر * زن از جا برجسته ، به بهانهٔ اینکه بر سر و صورت شوهرش صدمه نرسیده باشد ، آمده چشمهایش را گرفت * پس پس ، آنمرد خود را باطافي کشید و قایم شد ، تا شوهر از خانه بیرون رفت * بعد آنمرد آمده جماع پر شهوتي کرده لباس بر کرد * آمد در دکانِ شوهر آن زن ، و تفصیل آنروز را بیان نمود * بزّاز گفت " ای فلاني ترا بسبیل مردونه‌ات قسم ، [9] فردا مرا همراه خود به بر تا من هم سیلي [10] بکنم " * گفت " بچشم ؛ قبول دارم " * صبح دیگر آمد دمِ دکان * گفت " پاشو بریم " * گفته جلو افتاد ، و بزّاز از عقب * رفیق زن دق‌الباب کرد : داخل خانه شد * آنروز زن پول تمام کرده بود * گفت " امروز باید بروی توی این حوض ، کدوئي بگذارم بالای سرت * چنگالي [11] مالیده‌ام : با شوهر میخوریم [12] و شرط مي بندیم ، وهسّه [13] بکدو مي اندازیم " * مرد لخت شده در آب فرو رفت * شوهر درِ خانه را زد * زن در را کشود * شوهر با زن همراه داخل شدند * چنگال را پیش روی شوهر گذاشت و تکلیف کرد بخوردن * زن بنای عشوه و ناز و قرّ و غمزه نهاد * دندلي [14] برداشت و رو بکدو کرد و گفت " میزنم * اگر خورد ده تومان برده‌ام " * مرد گفت " من میزنم " * زن گفت " بسم الله [15] اگر نه زدهٔ ، باختهٔ [16] ها " * بزّاز دندل را میان ناخن بگذاشت و زد * نخورد * رفیق از زیر کدو [17] میدید ، سرش را پس میکرد : دندل رَدّ میشد * قریب سه چهار دندل زد * همه را ردّ نمود [18] * شوهرِ زن چهل تومان ضرر کرد وخجل شده باز بدکان خود رفت * آن مرد از میان آب سر بلند کرد و ضعیفه را در حوض صدا زد * چون ضعیفه رفت در حوض ، فرونشاند و گفت " چه جندهٔ بیمروّت هستي ! بیک ساعت مبلغ چهل تومان گرفتي " * لنگِ راستش بر شانهٔ چپش نشاند و لنگ چپش را زیر پای چپ زد و فرو نشاند در آب ، تا خصیتین * آنوقت

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1 *Mī-rī*, vulg. for *mī-ravī*. 2 *Ham-pā-yat* = *hamrāh-at*. 3 *Nazdīk-i bi-zan* ; izafat.

4 *'Avāmm-khiyāl mī-kunand ki shahvat-i zan chand jā hast masal*[an] *bar shast-i pā, sar-i pistān, narmah-i gūsh va-ghaira.*

5 *Tū havā* for *tū-yi havā* : the izafat is often omitted after *tū*. 6 An example from the Arabic Grammar.

7 *Shīr-āvīz*, " milk-safe, meat-safe." 8 This verse is nonsense.

9 " By your manly moustaches," a common oath amongst common men. 10 *Sail-ī* for *sair-ī*, here = *tamāshā*.

11 *Changāl*, a mixture of butter, bread, and dates or honey. 12 A common error of concord.

13 *Hista*, " stone of fruit :" *hassa*, vulg. form.

14 *Dindil* or *dandil* (m.c.) = *hista*. 15 *Bismi-'llah*, i.e., " do you commence." 16 *Hā*, " take care."

17 *Az zīr-i kadū*, does not mean from underneath, neither does *pas* mean ' back,' *vide* English translation.

18 *Radd namūd*, " he made it pass by him, miss him."

لذت مخصوص بردند و از آب بیرون آمدند * مرد اجنبي باز رفت در دکان بزاز و گفت " مبارک باد ! کار من باتمام رسید * مطابق پول اسپ و پول نقد گیر ما آمد * شوهرش چه مرد احمق بود که از زني کم بود " * مرد بزّاز گفت که " این مطلب را تعریف بکن برای کسی تا من ترا پول بدهم " * (زن آن بزّاز همشیرهٔ مجتهد آن ولایت بود) * گفت " چه عیب دارد ؟ " در خانهٔ یکی از همسایهای خود تمام کاملین و مجتهدین و خوانین را وعده خواست ؛ و همان مجتهد را که برادر زن [1] خودش بود نیز وعده گرفت : و برفیق زن گفت " تعریف کن " * آنمرد اجنبي بنقل کردن در آمد و کسي خبر به زن داد که " فلاني در خانهٔ فلان همسایه از تو نقل میکند " * آن زن چادر بر سر کرد و بالاي بام در آمد و از روزنهٔ [2] بام ملاحظه نمود * دید رفیقش است ، در حضور اینهمه جمعیت نقل سابق را میکند ، تا رسید بمحلّیکه شوهرش دندل به کدو میزد * آینهٔ توی سینهٔ زن بود * زن آینه را بآفتاب انداخت : عکس آفتاب بصورت آن مرد افتاد * مرد نگاه کرد دید زن صورتش را میخراشد [3] * آنوقت رفیق زن ملتفت شد و گفت که " یک مرتبه از خواب بیدار شدم " * حضّار از او پرسیدند که " اینها را بخواب دیدی " ؟ گفت " بلی مگر در بیداری همچو چیزی میشود ؟ " آن مرد بزّاز را بسیار زدند و گفتند " ای زن صفت ! تو این خلافها را چرا نمودي و این بهتانهای بی معني چرا به زن زدي ؟ " حکم نمودند ، او را بدار زدند ؛ و بعد از چهار ماه و ده روز که عدّهٔ [4] زن بر آمد او را بعقد همان مرد اجنبي در آوردند ؛ و پنج بچّه از آن مرد بمدت چند سال بوجود آمد ، دو دختر و سه پسر — و السلام *

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IV.

حکایت مم جعفر

شخصي بود نوکر باب [5] * روزی آقایش او را فرستاد پولی بگیرد * در بین راه هوا ابر شد و شب در رسید ؛ برف بسیاري گرفت [6] * شب در میانهٔ بیابان حیران و سرگردان * راهی هم بجائی بلد نیست * دید از طرف دست راست صدای سرنا مي‌آید - بهواي [7] سرنا بنا کرد برفتن * چند قدمي که رفت دید صدای تنبک [8] هم مي آید : چند قدم پیشتر که رفت دید آثار قلعهٔ پیدا شد * حال برف بسیار آمده است : راهی بجائی نمي برد * رسید بدر قلعهٔ ؛ اسبرا کشید توي یک کوچهٔ - چند قدمیکه جلو تر رفت در بسیار بزرگي بنظرش آمد : دست به در که گذاشت در وا شد : اسپ را کشید تو * دست میان جیب کرد - چپق و کیسهٔ توتون [9] را در آورد و چپق را چاق [10] نمود : کبریت روشن کرد که چپق را بکشد * دید اینجا بار بند [11] یست - آخور بسیاري هست - کاه هم ریخته * شکر خدا بجا آورد که امشب اسپم گرسنه نیست : اسپ را سر آخور بست و کاه بسیاري هم جلو ریخت * گفت اگر " برم [12] براي خودم شوم [13] پیدا کنم مبادا کسي بیاید رکاب و دهنهٔ اسپ را به برد " * گفت " شبی [14] از گرسنگي نمي میرم " * رفت بالاي سکوي بار بند - نمد

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1 *Va'da khwāstan* "to invite." *Barādar-zan* no izafat. 2 *Rauzana*, is any light hole.

3 Scratching the face is a signal to keep silence. It is also a sign of astonishment.

4 After divorce the *'iddah* is three months, but after the death of a husband, four months and ten days.

5 *Nūkar-bāb*, a private servant in livery.

6 *Barf girift* (m.c.), "began to snow"; also *bārān girift*, "began to rain." 7 *Havā = ṭaraf*.

8 *Tumbak*, "a kind of small drum." These instruments indicate that there was some festivity taking place in the fort.

9 *Tutun*, good, small tobacco, for cigarettes or ordinary pipes (*chupuq*); *tambākū* is tobacco leaf (for the *qaliyān*).

10 *Chāq k.* to prepare either a *chupuq* or a *qaliyān*: this idiom is not used for any other preparation.

11 *Bārband*, an outhouse for housing horses and cattle or for storing grain and straw.

12 *Bi-ram*, vulg. for *bi-ravam*. 13 *Shūm*, vulg. for *shām*. 14 *Shab-ī* = one night.

را تکانید - برفهایش ریخت - توبرهٔ اسپ را زیر سر گذاشت و نمد را روی خود کشیده به خواب رفت * بقدر نیم ساعت که گذشت دید یکي سر درمیان بار بند کرده گفت "مم جعفر[1] تا سه مرتبه * او پیش[2] خود گفت "مم جعفر یا شوهر این زن میباشد یا برادرش یا پسرش : از میان عروسي حکماً پلوئي نوني[3] آورده است به مم جعفر بدهد * خوب است که من جواب او را بگویم و این غذا را از او گرفته بخورم و آسوده شوم " * گفتا " بلی " * زن آمد بالاي سکو : دست در گردن مرد کرد و گفت " قربونت[4] بگردم کفش با چیت از برام آوردي ؟ " مرد حیرون موند[5] * گفت " اگر بگویم 'نه' شومها[6] را نمیدهد بخورم" : لابد گفت " آوردم ؛ در خانه است : صبح میآرم" * زن دست میان شلوار مرد کرد * مرد نمد را گسترانید و با او نزدیکي کرد * وقتیکه فارغ شد زن گفت "مم جعفر ترابخدا ! صبح زود کفش را بیاور که در عروسي پا کنم" * مرد گفت "بي بي به بخشید ؛ من مم جعفر نیستم ؛ من حاجي حسین اصفهاني هستم" * زن گفت " الان پدر ترا مي سوزانم " و دو دستش را گذاشت در طویله و فریاد بر آورد "اوي[7] دزد ! اوي دزد !" تا سه مرتبه * مرد دید که از میان خانهٔ عروسي مردمان چوغها را برداشته رو بطویله میدوند ؛ و اگر رسیدند او را هلاک خواهند کرد * آن مرد دو دسته در پشت زن زد و زنرا در میون باغچه روي برفها انداخت و رو بدر قلعه دوید که بگریزد * دید در قلعه را بسته اند * از ترس جون خود بتشویش بود * دید پلّهٔ گوشهٔ دالون[8] است از پلّه بالا رفت ؛ دید بالا خانهٔ است ؛ در گوشهٔ نشست و از اونجا نگاه بدر طویله میکرد * دید چراغ آوردند و گفتند "زن کو دزد ؟ دزدیکه نیست " * حال زن جواب اونها را چه بگوید ؟ گفت "من آمدم برم[9] ؛ دیدم در طویله صدا مي آید ; گفتم بلکه[10] دزد باشد " * اونها گفتند " صدای اسپ بوده است ؛ و این اسپ که بسته است مال خوانین است[11] : اسپ را بسته است و خود بعروسي رفته " * بعد ؛ همه از پي کار خود رفتند * مرد با خود خیال کرد که " قدری درین بالاخانه صبر میکنم تا آنها همه بروند * آنوقت میروم پهلوي اسپ خود میخوابم : و صبح اسپ را سوار میشوم و میروم " * درین خیال بود دید درمیان پلّها صدای پا مي آید * گفت " مبادا کسي باشد ترا پیدا کند " * در گوشهٔ بالاخانه پنهون شد : دید کسی سر درمیان بالاخانه کرد و سه مرتبه آواز داد "مم جعفر، مم جعفر، مم جعفر" * مرد فهمید که همون زن است : جواب داد " بلی " * زن آمد درمیان بالاخانه ؛ و دست در گردن مرد انداخت و گفت " بلات بجونم ؛ قربونت شوم ؛ شما اینجا بودیند[12] و من نزدیک بود خون ناحقی بکنم " * مرد گفت " بلي " * زن گفت " بگو بدانم کفش و چیت برایم آوردي ؟ " مرد مطلب طویله در دستش بود : گفت " آوردم و کفش را نعل کرده ام ؛ اما در خانه است ، همراه من نیست " * زن گفت " از برای چه نیاوردي ؟ " مرد گفت " خیال کردم مبادا شما را نه بینم : در خانه گذاردم ؛ صبح مي آرم " * باز زن دست در شلوار مرد کرد * مرد نمدا را گسترانید و خوب سیرجماع کرد * وقتیکه فارغ شد زن گفت "مم جعفر، ترا بخدا ! قسم میدهم که صبح کفش را یارکه در عروسي در پا کنم " * مرد گفت " اي بي بي به بخشیند ، من در طویله عرض کردم بشما که بنده مم جعفر نیستم ؛ حاجي حسین اصفهاني هستم ؛ و آمدم بگیرم قلق[13] * راه را گم کردم ؛ شما خواهیند[14] بخشید " * زن گفت " ایندفعه پدرت را آتش بزنم که خود یاد کني ؛ نمیگذارم فرار نمائي " * دم در پلّها

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1 *Muḥam* or *Mam Ja'far*, vulgar abbreviation for *Muḥammad Ja'far*.
2 *Pīsh-i khud*, "to himself."
3 *Nūn-i*, i.e., *nān-ī*.
4 *Qurbūn*, i.e., *qurbān*.
5 *Ḥairān mānd*.
6 *Shāmhā* (m.c.), plural to signify various dishes.
7 *O,ī duzd* and not *āy duzd*; the latter would be used in addressing a person.
8 *Dālān*.
9 *Āmadam bi-ram = āmadam radd shavam*.
10 *Balki*, "perhaps."
11 *Māl-i khavānīn* = "some gentleman's property."
12 *Būdīnd*, vulg. for *būdīd*.
13 *Bi-gīram qulluq*, "to recover revenue by force."
14 *Khwāhīnd*, vulg. for *khwāhīd*.

ایستاد و بنا کرد پی در پی صدا زدن که " اوي دزد ! اوي دزد ! " که یکمرتبه از هفت ساله تا هفتاد ساله [1] با چوغ و چماغ [2] ریختند در قلعه * مرد از هول جون ، خود را از دیوار بیرون قلعه انداخت * کوچهٔ بود ، درمیان کوچه بنا کرد برفتن * دید یک در خانه ایست * دست در در خانه گذاشت در وا شد * داخل خانه گشت ، صدا زد " صاحب - خانه [3] " * دید کسي جواب نداد * اطاقی در برابر [4] بود و روشنائي نمایون * رفت پشت در اطاق ، دست بدر اطاق زد ، گفت که " ای صاحب-اطاق ! ای برادر ! ای خواهر ! ای عمو ! ای کربلائي ! ای مشهدي ! " هر چور صدا زد دید کسي جواب نمیدهد * لابداً در اطاق را وا کرد ، دید کرسي [5] بسیار بزرگي میون اطاق گذاشته است و لحافي بالای آن انداخته ، و چراغی بالای او گذاشته اند * مرد از زور سردي هوا نمد را گذاشت گوشهٔ اطاق ، و رفت زیر کرسي نشست * ربع ساعت که گذشت گرسنگي زور آور شد * برخاست گردش کرد * نوني بدست آورد : گوشهٔ نون را شکست که بخورد دید نون خشک نمیتواند بخورد ، بر خاست توی اطاق باز گردش نمود : روغني [6] پیدا کرد * نشست ، نون و روغنها را [7] بخورد * میل به کشیدن قلیون پیدا کرد : قلیوني دید بکشید * قلیون را گذاشت کنار * چراغ را خاموش کرد [8] و در اطاق را بسته خوابید * نیم ساعت که گذشت دید یکي به هیبت [9] در اطاق را بهم [10] زد و بخود ملامت میکند و بد میگوید که " بر پدر من لعنت اگر دل بمردهای این زمان به بندم ، از سر شب تا بحال میون برف گردش کردم و بمقصود [11] خود نرسیدم * یک مرتبه افتاد بالای مرد ، بنا کرد دست بقد مرد کشیدن و گفت " مم جعفر شما اینجا بودیند ؟ و من سر شب تا بحال میان قلعه تفحّص میکردم " ؟ * مرد گفت " بلی ، میان آدمها ، میانهٔ عروسي شما را ندیدم * خانه را که بلد بودم ، آمدم درمیان خانه خوابیدم ، و گفتم البته هر کجا که هستید مي‌آئید * بخواب رفتم تا حال که شما آمدید " * آن زن دیگر چراغ [12] روشن نکرد : پهلوی مرد گرفت و خوابید * مرد نون و روغن خورده ، زیر کرسي گرم خوابیده ، باز برخاسته کام خود را از نو گرفت * همینکه فارغ شد نگاه به پنجرهٔ اطاق کرد ، دید هوا روشن است * با خود خیال کرد که " اگر صبح شود این زن مرا به بلا مي افگند : هیچ بهتر ازین نیست که برخیزم و برم " * همچنونیکه [13] برخاست که برود ، زن دامن مرد را گرفت : باز بنا کرد بقسم دادن که "مم‌جعفر همین الان کفش را بیاور " * مرد بنا کرد به خندیدن و گفت " ای بي بي ، مذکه در میان طویله گفتم مم جعفر نیستم حاجي حسین اصفهاني هستم : اعتقاد نکردي ، آمدي درمیان بالا خونه مرا پیدا کردي * اونجا هم گفتم من مم جعفر نیستم : باز اعتقاد نکردي * الحال بخدا مم جعفر نیستم ، حاجي حسین اصفهاني هستم " * زن که این مطلب را شنید ، گفت " ترا بخدا ! بگو بدانم [14] که تو جنّي یا پري زادي [15] که امشب هرجا میرم تو دوچار من میشي [16] ! " مرد گفت " ای زن ، بگو تو کیستي و مم جعفر کیست ؟ " زن گفت که " بدان که مم جعفر پسر کدخدای این آبادیست [17] * مدّت

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1 Or *az panj* (or *shash*) *sāla tā panjāh* (or *shaṣt*) *sāla*, *i.e.*, "young and old."

2 *Chūgh u chumāgh* = *chūb-u chumāgh*, "sticks and staves."

3 *Ṣāḥib-khāna* and *ṣāḥib-uṭāq*, no izafat.

4 *Dar barābar*, i.e., *rū-bi-rū*, "opposite."

5 *Kursī*, a low table covered with a large quilt and having underneath it a lighted brazier. People sit or lie under the quilt, their heads outside but their legs under the *kursi*.

6 *Rūghan-ī*, "a dish of butter."

7 *Rūghanhā rā*, pl = "all the butter."

8 Or *kusht*.

9 *Bi-haibat* = "in a rage."

10 *Dar bi-ham zadan*, "to slam to the door" (here after entering).

11 *Maqṣūd*, *i.e.*, meeting with Muḥam Ja'far.

12 *Chirāgh rūshan na-kard* = 'she lit no light,' but *chirāgh ra rūshan na-kard*, 'she did not light *the* lamp.'

13 *Ham chunān-ī ki* for *hamīn ki*, "as soon as."

14 *Bi-gū bi-dānam*, m.c., "Tell me." (Irish people frequently before asking a simple question, say, 'So and so, now tell me.')

15 *Parī* in colloquial Persian means a good fairy, and *Jinn* a bad one.

16 *Mī-shī*, vulg. for *mī-shavī*.

17 *Ābādī*, *i.e.*, "village."

دو سال بود [1] که میخواست با من نزدیکي کند: ممکن نمیشد[2] * امروز عروسي در قلعه واقع شد * وقتیکه میخواست [3] برود شهر، اسباب عروسي بخرد، من باو گفتم " اگر شیش [4] ذرع چیت از برای زیر جامه [5] ویک جفت کفش ساغري [6] از برای من از شهر مي آوري و امشب میدهي من ترا راضي مینکم * غروبي [7] از شهر آمد، کفشها را [8] با چیت بمن نشون داد که ' شب بیا بتو میدهم و مطلب را میگیرم ' * من بخیال مم جعفر تفحّص میکردم که دوچار تو شدم * و این خانه هم خانهٔ خودم است * از سر شب تا بحال هرجا گردش کردم [9] مم جعفر را نیافتم * حال بگو بدانم تو کیستي " * مرد گفت " من حاجي حسین اصفهاني هستم * آمدم بروم به ایل [10] حیدر علي خان، پول بگیرم * شب برف آمد و من راه را گم کردم * درین قلعه آمدم و دوچار تو شدم" * زن گفت " من آبرو [11] دارم: ترا بخدا که این مطلب را بکسی نگو " * مرد گفت " اگر توشهٔ راهی بمن میدهي بکسی نمیگویم " * زن رفت قدری نون و روغن آورد و بمرد داد؛ و خود زن رفت اسپ را آورد؛ داد بمرد * مرد سوار شد و از پی کار خود رفت — باقي[12] و السلام و نامه تمام *

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V.

قصه حاجي خابجاني

یا

اول که حرف بزند

حاجي بود در خوابجون [13] * روزي داخل خونه [14] شد؛ دید زنش بکار خود مشغول است * گفت " ای زن! برخیز گوسفندها را او [15] بده" * زن گفت "مگر چشمهایت کور است؟ نمي بیني که من خیّاطي میکنم؟" مرد تغیّر نمود: چوبیکه در دست داشت بطرف زن انداخت * زن برخاست و پاروي [16] برف روبي را در داشت؛ طرف مرد پراند و گفت " اي مرد! بنشین؛ هر کدام زودتر حرف زدیم [17] گوسفندها را او میدهیم " * نشستند * زن دید عقدهٔ دلش زیاد است: با خود خیال کرد که " بر میخیزم؛ میروم بخونهٔ همسایه، صحبت میدارم و مراجعت میکنم تا شوهرم را بحرف بیارم " * چادر بر سر کرد و از جلو مرد روانه شد که بلکه [18] مرد بگوید " کجا میروي ؟ " مرد هیچ نگفت * زن رفت در خانهٔ همسایه *

مرد تنهائي باو اثر کرد؛ برخاست آمد در خانه [19] نشست * شخصی آمد عبور کند؛ سلام کرد * جوابش [20] را به اشاره داد که مبادا زن بشنود * دیگری آمد سلام کرد * باز مرد جواب سلام را بواش [21] داد؛ از ترس اینکه مبادا زن از پشت‌در یا بالای پشت بوم [22] بشنود * مرد دلاکي آمد، آینه دست [23] حاجي داد * حاجي نگاه در آینه کرد؛

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1 *Būd—mī-khwāst* or *Ast—mī-khwāhad.* 2 *Mumkin namī-shud*, "he could not get an opportunity."
3 Or *khwāst.* 4 *Shīsh*, vulg. for *shash*, "six."
5 *Zīr-jāma*, the short 'ballet skirt' worn by Muslim women; *also*, 'a man's under-drawers.'
6 *Sāghirī*, "green leather" (strong and good). 7 *Gharūb-ī*, "this sunset, this evening" (m.c.).
8 *Kafsh-hā* vulg.; the Sing. *kafsh* is used for one shoe and the plural for a pair.
9 Or *harchi gardish kardan.* 10 *Īl*, pl *īliyāt* or *ilāt*; the wandering black-tent folk. 11 *Āburū*, vulg. for *ābrū.*
12 *Bāqī*, in m.c. often *bāghī*: "Goodbye; the tale is ended." 13 *Khwābjān*, name of a place.
14 *Khāna.* 15 *Āū*, vulg. for *āb.* 16 *Pārū*, "shovel."
17 *Har kudām zūd-tar ḥarf zadīm—mī-dihīm*, "whichever of us speaks first will give—": grammatically should be—*bi-zanad—mī-dihad.*
18 *Balki*, "perhaps." 19 *Dar-i khāna.*
20 To salute is a *sunnat*, but to answer a salute is a *farz.* 21 *Yavāsh* or *āhista* = in a low voice. 22 *Bām.*
23 A barber does not orally ask a customer if he wants to be shaved, but offers him the mirror. If the customer takes the mirror it is a sign he wishes to be shaved.

آینه را بدست دلّاک داد * مرد دلّاک گفت "سرتانرا بتراشم؟" حاجي سکوت کرد که مبادا زن بشنود * دلّاک سکوت را موجب رضا دانست * لُنگ [1] بگردن حاجي انداخت * حاجي گفت [2] " اگر لنگ را ور دارم و بگویم ' سر نمیتراشم' زن مي شنود و میگوید ' برو گوسفندها را او بده ' : بهتر آنست که حرف نزنم" * دلّاک سر را تراشید * قیچي درآورد که ریش حاجي را اصلاح کند * دو نفر دران گوشه [3] دعوی میکردند : حواس مرد سلماني [4] رفت توی دعوي ، ولي دست و مقراض او کار میکرد * رو که بر گردانید دید که یکطرف ریش حاجي را زده است * دید که نمي شود با منقاش موها را بیرون آورد [5] : طرف دیگر را هم زد * دید حاجي بد شکل و بد رؤیت شده ، هیچ صحبت هم نمیدارد * مرد دلّاک او ریخت [6] و ریش حاجي را از بیخ تراشید * حبّ زغالي ور داشت ، سابید روی سکو ، [7] و سه خال روی حاجي گذاشت ، و آینه را دستش داد * حاجي نظر در آینه کرد ، دید که مرد دلّاک کار خود را کرده است * با خود خیال کرد که " اگر من زمین را بآسمان بدوزم ریش من سر جایش نمي آید و اگر با سلماني صحبت بدارم زن در گوشهٔ پنهان است ، مي شنود ، میگوید ' برو گوسفندها را او بده ' * بهتر است که صحبت ندارم" * آینه را دست دلّاک داد [8] * دلّاک گفت " اجرت سر تراشي را بده " : دید صحبت نمیدارد * گفت " حکماً این گنگ است ، زبون ندارد ، میرم [8] در خونه ، و میگویم سر [9] مرد شما را تراشیده‌ام و مزد آنرا بدهید " ، * آمد داخل خونه ، صدا زد "صاحب خانه" [10] * دید کسی جواب نمیدهد * رفت در اطاق ، نظر انداخت ، دید بقدر پونصد [11] تومون اسباب طلا و نقره گل میخ [12] است * گفت هیچ" بهتر ازین نیست که بروم این اسبابها را ور دارم" * اسبابها را بر داشت ، ریخت درمیان لُنگ دلّاکي و از در خانه بیرون آمد * حاجي بخیال آنکه هیزم یا چیز دیگر است هیچ نگفت مبادا زنش پنهان باشد و بشنود و بگوید " تو اول حرف زدي ، برو گوسفندها را او بده " * همچونکه [13] دلّاک گذشت ضعیفه از خانهٔ همسایها آمد ، دید یک زنی لباس مردونه پوشیده و در خانه نشسته است * پیش آمد دید شوهر خودش است ، ریش ندارد و خال گذاشته * ضعیفه بخنده رفت [14] گفت " ایمرد ! که ترا باین صورت کرده است ؟ " مرد برخاست بخندید و جستن کرد و بنا کرد بدست زدن [15] که " تو حرف زدي ، برو گوسفندها را او بده " * زن دید که مرد دست میزند ، وارد خانه شد [16] در اُطاق رفت ، دید که اسبابهایش نیست * رنگش پریده بچشم گریان نزد [17] مرد دوید و گفت " ای مرد ! گوسفندها را او میدهم ، بگو به بینم اسبابها را که برده است ؟ " گفت " ای زن ! وقتیکه تو رفتي من آمدم در خانه گرفتم نشستم * مرد دلاکي آمد مرا باین صورت کرد * وارد خانه شد [16] ، اسبابهایترا او برده است * من بخیال آنکه خرده هیزم است حرف نزدم ، مبادا که تو آنجا باشي و بشنوي و بگوئي ' گوسفندها را او بده ' " * زن بگریه شد و دوید بقفای مرد دلاّک * سراغ گرفت تا آمد در دروازه [18] *

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1 *Lung* is the loin cloth used in the *ḥammām*. Barbers use one to protect the shoulders of their customers.

2 *Guft*, "thought, said to himself." 3 *Ān gūsha*, 'in a corner away from him.'

4 *Salmānū*, "barber"; perhaps derived from Salmān, the friend of 'Ali and a Zardushti barber, and afterwards a Governor in Persia.

5 *i.e.*, he could not lengthen the cut hairs by pulling them with tweezers.

6 For shaving, water alone (in summer cold water) and not lather is used. Shaving soap, it is said, has only lately been introduced into Tehran. *Vide* also note 4, page 392.

7 *Sakū*, "a wooden bench, a mud platform;" *also* the brick recess and seat at gates.

8 *Mī-ram*, vulg. for *mī-ravam*. 9 *Mard* = husband. 10 *Ṣāḥib-khāna*, no izafat. *Vide* also note 5, p. 392.

11 *Pūn-ṣad*, vulg. for *panj-ṣad*. 12 *Gal-i mīkh*, "on (the neck of) a nail." 13 For *chūnki*.

14 *i.e.*, involuntarily fell a-laughing. 15 *Dast zadan*, "to clap the hands"; *also* "to touch, meddle with."

16 *Vārid-i khāna shud*, 'entered the house.' 17 *Nazd*, for persons, and *nazdīk*, for things.

18 *Dar* is a small door and *darvāza* is a large gate.

زن را در دروازه داشته باشید : چند کلمه از دلاّک بشنوید :—

دلاّکو[1] با خود خیال کرد "اسبابها را که با خود آوردم ، اگر درین ولایت بمانم مرا میگیرند ، و حبس میکنند * از آنکه مرا میگیرند میرم بطهران ، اسبابها را میدهم ؛ یک زنی از برای خود میگیرم ، و شغل کاسبي [2] را ، در طهران ، پیشه میکنم " * بنا کرد به آمدن تا رسید به قلیان فروشي [3] آنجا نشست قلیانی بکشد و رفع خستگي او بشود که از عقب ، زن رسید * دید دلاّکو نشسته و قلیان میکشد * با خود خیال کرد که ' اگر اسبابها را از او بگیرم و مراجعت کنم ؛ رندي [4] نیست ؛ باید نقشی بزنم و بلاي بی درمانی بر سر او بیارم که بدستانها بماند " * راه را کج کرد [5] و آنطرف تر جلو راه نشست *

مرد دلاّک قلیان کشید و بر خاست * بنا کرد برفتن * از دور دید سیاهئي بنظرش آمد * هر قدر جلو تر آمد سیاهي بر ملا تر [6] میشد * تا [7] آمد دید زنی نشسته است * زن به دلاّک سلام کرد * دلاّک جواب داد ، گفت " ای خواهر ! درین بیابون چه میکني " ؟ گفت " اي برادر ! سرگزشت من بسیار است " * مرد دلاّک نشست ، گفت " سرگزشت خود را بگو " *

زن گفت " بدان و آگاه باش که سال گذشته شخص تفنگ داری آمد طهران [8] ، و مرا از پدرم خواهش کرد * پدر مرا باو داد * مرا برداشت ، آورد در خابجون * مدّت یک سال ما زن و شوهر بودیم * بعد از یک سال از دنیا رفت * نه پدری نه خویشی و نه اقربائی هیچ کس را نداشت * من در خابجون غریب و بیکس مانده‌ام با خود خیال کردم که هیچ بهتر ازین نیست بروم بوطن ، در طهران ، و پای پیاده براه آمدم تا اینجا رسیدم : خسته شدم ، نشستم " : و همچنانیکه حرف میزد رو بند [9] خود را بعقب کرد * چشم دلاّک افتاد بر چهرهٔ آن زن ؛ شیصد و شصت و شش [10] رگ از مُلک بدن دلاّک کشیده شد : بلبلش یا قدّوس خواندن گرفت [11] و عاشق بجمال دختر گردید * دامن دختر را گرفت ، دور دست پیچید ، گفت " اي دختر ! بدان و آگاه باش که من عاشق بجمال تو شدم ، واز سه کار یک کار با من بکن " * اسبابها را گذاشت جلو دختر ، گفت " اینها مال خواهرم است * امروز بخواهرم [12] دعوا کردم اسبابهایش را برداشتم بروم طهران ؛ کسب من دلاّکي است " * اسبابهاي دلاّکي را هم نشان داد و گفت " یا زن من بشو ، اسبابها را بتو میدهم و پالکي [13] تا طهران برایت کرایه میکنم ؛ این یک مطلب : یا صیغهٔ محرمیت [14] بخوان که تا طهران محرم تو باشم : یا برخیز برویم میان آن منزل ؛ حیوانی از برایت کرایه بکنم تا طهران * طهران که رسیدیم هرچه بتو داده ام پس بده " *

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1 *Dallākū*, dimin. for contempt. 2 Petty trading.

3 *Qaliyūn-farūsh*, not pipe-seller but a man that sells tea and smokes; called also *qaliyūn-chī* : one or more to be found on each road a mile or two from the city.

4 *Rindī* here = *zarangī*, "smartness." Women are noted for their wiles, and the heroine was anxious to preserve the reputation of her sex.

5 "She made a circuit." 6 *Bar malā uftādan*, "to become public (generally of a secret, of news. etc.).

7 *Tā*, "by the time that, when." 8 Prep. *bi* omitted. 9 *Rū-band*, a light white veil.

10 *Shai-ṣad*, vulg. for *shash-ṣad*. It is a vulgar belief that there are 666 veins in the body. Another common expression is *Chahār ṣad u chihil u chahār band-i ustukhwān*, the belief being that there are 444 bones.

11 *Bulbul-ash yā Quddūs' mī-khwānad*, is a polite phrase for *barāy-i rāst shudan-i ālat-i tanāsul*. *Bulbul-i yā Quddūs*, is a species of warbler.

12 *Bi-khwāhir-am*, vulg. for *bā khwāhir-am*.

13 *Pālakī* (Hindus. *pālkī*) is in Persia an open *kajāva*, the term *kajāva* being in Persia confined to the closed 'cage.'

14 *i.e.*, that she might be *maḥram* to him like a sister, etc., so that it would be lawful for him to see her face.

زن از نا غلائي [1] که داشت دامن دلّاک را گرفت و بنا کرد به گریه کردن : گفت " ایمرد ! اگر مرا بگیري من کنیز تو هستم ، تا زنده‌ام سر از قدم تو ور نمیدارم * میل دارم زن تو بشم " *

دلّاکو خوشوقت شد ، زن را برداشت ، بطرف کاروانسرا بنا کردند برفتن * وارد کاروانسرا شدند * آفتاب بمحل غروب رسید ، هوا سرد بود * دلّاک رفته در طویله ، بالای سکو منزلي گرفت * زنرا برد ، بالای سکو منزل داد *

چون زن بسیار تشنگي پیدا کرد برخاسته از طویله بیرون آمد * رفت زیر دالانِ کاروانسرا ، پیش بقّال * پرِ آلوی [2] آب انداخته گرفت ، خورد زیاد و مراجعت کرد *

در طویله از قضا یک تُرکي پیدا شد : همچنانیکه رفت نزدیک برود ، دلّاک صدا کرد که " من زن همراه دارم ، بالای آن سکو منزل بگیر * " تُرکه [3] رفت بالای سکوی دیگر منزل کرد ، نشست ، شوم خورد * خسته بود ، بخواب رفت *

دلّاک به زن گفت " اگر فردا آخوند بیاید و عقدت را بمن به بندد ، اِسمت را بگو که بدانم * " دختم سر بزیر اندخت و بنا کرد به گریه کردن ، که پدر و مادر من اسم بدی بمن گذاشته اند ، و خجالتم می شود بگویم "* دلّاک گفت " بگو هر چه اِسمت هست خجالت مکش " * گفت " ایمرد ! من در طفولیّت نمیتوانستم خود را نگهه دارم ، پاهای خود را نجس میکردم : اسمم را گذاشتند ریدم خانم * " سلماني گفت " بسیار خوب ریدم خانم اسم است " * نشسته باهم دیگر صحبت داشتند *

بقدر ربع ساعت که گذشت گفت " بر خیز بخوابیم " * همچنانیکه دراز کشیدند دست سلماني برای شلوار زن دراز شد * زن گفت " میخواهي چکني " ؟ گفت که فردا صبح زن من میشوی ، استدعا دارم که امشب یکدفعه بمن بدهي که گوشتِ من آب نشود * زن گفت که " من بحرامي چنون [4] کاري نمیکنم * تو بلکه میخواهي مرا محک بزني ؟ " سلماني بنا کرد بقسم خوردن که " شهوت غلبه کرده است و میترسم که افیت برساند " * زن گفت " پس یواش حرف بزن که این مرد تُرکِ صدای ما را نشود " * این را گفته از زیر دست سلماني بعقب رفت *

سلماني یواش صدا زد که " ای ریدم ! " بار دوم باز گفت که " ریدم ! " بار سوم بلند تر گفت که " ای ریدم ! " تُرکه بیدار شد : فریاد زد که " کو پک اوغلي ، پدر سگ ! اینجا نریني ، بوی گندش ما را میکشد " * سلماني بی صدا شد * زن پیش آمد ، آهسته بگوشش گفت " ای مرد مرا چرا صدا زدي که این ترکه بیدار شود ؟ [5] من رفته بودم بول بکنم " * باز بنا کردند به بازي کردن باهم تا ترک بخواب رفت *

باز زن برخاست از پهلوی سلماني عقب نشست * هرچه سلماني دست بروی زمین کشید زنرا نیافت * باز صدا زد " ریدم خانم ! " ترک از خواب بیدار شد ، سنگی طرف سلماني انداخت و بناکرد به فحش دادن که " آتش بقبر پدر تو و خانم هر دو بگیرد ! اگر چشم نداري بر خیز تا من دستت را بگیرم ، بیرون رفته شاش کن و بر گرد " * باز سلماني بیصدا شد *

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1 *Nā-ghulā'i*, m.c., "trickiness." 2 This green stuff has a purging effect. 3 *Turka*.
4 Vulg. for *chunīn*. 5 Note the Pres. Subj. "Why did you call me loud enough to awake the Turk?"

زن پیش آمد دامن سلماني را گرفت و یواش گفت " ای مرد دلاک ! برای رضای خدا اینقدر صدا نکن * میخواهي هر دو مانرا بکشتن بدهي؟ چرا اینقدر صدا میزني؟ بر خیز عبای خود را بیانداز تا بخوابیم "* همچنانیکه سلماني برخاست زن گفت " برم ، زهر آب بریزم ، بیام " [1] *

آمد بالای سر ترکه * کلاه بزرگي که داشت برداشت و چکمها را هم گرفت ، شمشیر را هم برداشت ، از طویله بیرون آمد * آن پرهائیکه خورده بود تحلیل رفته بود [2] * توی کلاه را پر کرد ، توی چکمها را پر کرد ، دستهٔ شمشیر را هم نجس کرد : آورد بالای سر ترکه گذاشت و رفت نزد سلماني * به بازي در آمدند تا خوب سلماني را رو بخود کرد یک مرتبه از زیر دست سلماني گریخت *

سلماني بنا کرد پی در پی صدا زدن که " ریدم خانم ! قربونت برم ! کجا رفتي ؟ " ترک از سر شب تا آنوقت سه مرتبه بیدار شده بود : اوقاتش تلخ در غضب شد * کلاه برداشت بر سر بگذارد ، دید بالای صورتش پر گه شد * چکمها را بپا کرد دید آنها هم نجست [3] است * شمشیر را برداشت دید دستهٔ شمشیر هم نجست [3] است * غضب آلوده دوید رو به سکوئیکه سلماني بود و با شمشیر زد گردن سلماني را *

زن ، از آن ، بالا جست میان طویله ، و سر سلماني را برداشته بنا کرد به سینه گذاشتن و گریه کردن و دروغکی بنا کرد به " برادر برادر " گفتن * خلق که میان کاروانسرا بودند از هفت ساله تا هفتاد ساله چراغها را روشن کردند و آمدند در میان طویله * دیدند زن گریهٔ بسیار میکند * گفتند " ای زن ! ترا چه میشود" ؟ گفت " برادر من ناخوش بود ، شکسته دل [4] داشت ، بر خاست از طویله بیرون رود ، نتوانست خود داري کند ، پای سکوئي که ترک خوابیده بود نجس کرد * ترک برخاست و او را بقتل رسانید " * خلق کاروانسرا همه ریختند ، بغل ترک را بستند * ترک را نگه داشتند تا صبح شود *

صبح که شد ترک را آوردند * دویست تومان پول در خرجین او بود گرفته در عوض خون بهای سلماني با اسب ترک دادند * زن رفت شش ذرع چلواري گرفت ، وجسد سلماني را بخاک سپرد و اسبابهای سلماني را ور داشت * اسبابهای خودش را هم گرفت گذاشت درمیان خرجین ، و خرجین را به ترک [5] اسب بست ، و سوار شد ، رو بخا بجان بناکرد به آمدن *

وقتی که آمد دید حاجي هنوز نشسته است و میگوید " تو حرف زدي بیا برو گوسفندها را او بده " * ضعیفه آمد یک سطل [6] آب کشید بگوسفندها داد * رویش را به حاجي کرد و گفت " ای مرد ! از برای یک سطل آب [6] ریش تو بتراشیدن رفت ، و سلماني هم بقتل رسید ، و یک اسب و دویست تومان پول بمن رسید با اسبابهای سلماني " — و السلام [7] *

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1 These Aorists express the future: *lit.* "May I go and —" and hence a polite form of "I will go."

2 "Had become digested." 3 *Najist*, vulg. for *najis*. 4 M.c. = *ishāl* or *dil-dard*.

5 *Tark*, the back part of the saddle. There are small saddle-bags for fastening behind the saddle.

6 *Satl āb*, "bucket of water"; no izafat. 7 *Va-s-salām* = "and that is the end of this story."

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THE DARDS AT KHALATSE IN WESTERN TIBET

BY

THE REV. A. H. FRANCKE.

WITH THREE PLATES.

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The Dards at Khalatse in Western Tibet.

(With three plates).

By the Rev. A. H. Francke.

[Read June 6th, 1906.]

In a previous article entitled "Notes on a Language Map of West Tibet," J.A.S.B., Part I, No. 4, 1904, I had to touch the Dard question of Western Tibet, in particular that of Khalatse (Khalsi or Khalchi of the maps); and before entering the domain of more recent investigations in that territory, it will be well to summarize what had been said with regard to the same topic in the previous paper.

According to the traditions of the present inhabitants, Khalatse was a Dard colony before it became a Tibetan village.

The names of the *phaspun*-ships or clans of Khalatse indicate that the greater part of the population was Dard, the name of one clan in particular pointing to the close vicinity of Gilgit as the seat of its ancestors. The other clan is believed to have emigrated from Baltistan; still, as its name is Dard, we may suppose that it originally was Dard also. But it may have settled for some time in Baltistan before proceeding to Ladakh.

We find a last remnant of the Dard language in a prayer which is addressed to the spirit of the house by the *Gongmapa* family, but which is used also in several other homes. The prayer runs thus :—

> Give abundance, honour to thee, O god Zhuni!
> Crops also, honour to thee, O god Zhuni!
> A son also, honour to thee, O god Zhuni.

The Māmani festival, which is held about 1½ months after mid-winter, is considered to be a Dard custom. A feast of cooked heads of goats and sheep with spiced omelettes is given, in which all who like may participate.

So much had been said about the Dards at Khalatse in the previous article. Since then several more items with regard to the ancient Dard colony have come to light, as follows.

The Dards did not live on the site of the present village of Khalatse, but about a mile above it in a ruined castle called *'aBrogpai mkhar* (Dard castle). The Dards apparently never lived in open villages or towns, but in fortified places. They also did not build their houses separately, but had them all put together in a lump, like a beehive. This style of building can be still observed in the existing Dard villages of Da and Hanu where also remnants of the ancient fortifications can still be seen. The castle above Khalatse must have been a very similar beehive-like structure, from what can be made out from the ruins. Its destruction was very thorough indeed, but that does not necessitate the idea that it fell under the assault of fierce enemies. The scarcity of wood in Western Tibet has to account for many more thorough destructions of buildings in the country. When the ancient Dards left their home and settled down

in the present villages of Khalatse and Skyinling, they took all the wooden parts of the house—beams, doors, door-frames, etc.—along with them, and by taking them out of the old building, effected its thorough destruction.

Below the ruined castle are the abutting terraces of the former fields, and a little above it, close to the brook, is an oasis with several apricot trees, the ruins of a house and several green fields which, though once deserted, were brought under cultivation again at my suggestion. They constitute the last remnant of cultivation that has survived from the old village to the present day. Besides the fields in the close vicinity of the castle, there are many more higher up in the valley, and also traces of the ancient watercourses can, in many places, be seen. These watercourses were apparently constructed with the greatest possible skill, and were led across the brook in many places. There are also ruins of one or two small summer-residences among the ruined fields. The total of the once cultivated area in this valley between Khalatse and Skyinling is probably about as much as the total of the cultivated area of the present village of Khalatse. If all these deserted fields could be brought again under cultivation, it would mean a considerable gain to the state. But as the villagers are strongly convinced that the amount of obtainable water has been decreasing, since the present Kalpa has turned towards 'bad,' it would require a strong government and a wise irrigation officer to convince them of the contrary.

Where a little valley branches off towards the left of the castle, a very good specimen of the ordinary type of stone-mortar can be seen with the ancient pestle still in it, as shown on the photo (pl. XVIII, fig. 3). After this stone-mortar the little valley is called now-a-days the mortar-valley (*stuny lung*).

On the hillside above the ruined castle is a group of three little *mchod rten* which are called the *mchod rten* of the Dards (*'aBrogpai mchod rten*). They are the only *mchod rten* which are preserved at this site. They show traces of white, red, and blue, or black, colour, which reminds us of one of the songs of the Dards of Da. (See *Indian Antiquary*, 1905, "The Eighteen Songs of the Bono Na Festival," No. II.) According to that song the religious system of the Dards exhibits the same system of colours as we find it in the Tibetan *gLing chos*, viz., white for heaven; red for earth; and blue or black for the realm of the Nàgas. Probably the three *mchod rten* were erected in honour of these three realms of the world. Also on the top of a low ridge, a little closer to the ruined castle, there are traces of ancient masonry, which may be the remnants of the plinths of other ancient *mchod rten* or similar structures.

Fragments of pottery are very frequent among the ruins, but neither have we as yet discovered entire pieces, nor shards with a dark-red design painted on them, as have been found in other places of presumably Dard origin. Ornamental pottery has, up to the present, been found only in the following three places: Balu mkhar, Alchi mkhar gog, and in the ancient grave one mile above Leh. The pieces found in the latter are well preserved and entire, and are, for this reason, of the greatest interest.

In the "Valley of the Mortar" mentioned above, there are several graves, built of rough stones above the ground and leaning against a rock in many cases. Some of them show traces of mortar. As several of them have been opened, probably by treasure-

seekers, we were able to examine the skull of a man. It was of very distinctly dolichocephalic shape, and thus speaks in favor of the popular tradition that the ancient inhabitants of the site were Dards. The fact that the ancient Dards buried their dead, instead of burning them, as is the custom of Lamaists, has given rise to the supposition that the Dards were Mohamedans. If those of Khalatse were Mohamedans at their arrival in Ladakh, we should have to date their emigration from Gilgit many centuries later than I have done to the present. But I think there are a number of facts which make it improbable that the emigration of, at least, the bulk of this tribe of Dards should have taken place in Mohamedan times. (1) The prayer to god *Zhuni*, offered at Khalatse in Dardi, has nothing of Mohamedanism about it. (2) The hymnal of the Dards of Da, which is still sung at the time of the Bōnō-nā festival, does not contain any traces of Mohamedanism, although the word *khoda*, god, is occasionally used in it, side by side with Tibetan names of gods. That Mohamedan and Tibetan mythological names have entered the Dard pantheon, is due to the present isolated position of the tribe in the middle of adherents to these great religions. But song No. III of the hymnal (*Indian Antiquary* 1905), containing the Dard account of the creation of the world, reminds us more of Hinduism than of Mohamedanism, and the individual names of gods occurring in the hymnal may be the last remains of indigenous Dard mythology. (3) Very ancient Buddhist sculptures, scattered all over Ladakh, are exactly of the same style as the ancient Buddhist sculptures of Gilgit. Compare the plate in the "Tribes of the Hindookoosh," by J. Biddulph.

The Dard Castle on the shore of the Indus.—At the end of the cultivated area of Khalatse, there are the ruins of an ancient fort (on the right shore of the Indus) which popular tradition calls a Dard castle. Of the walls nothing is left, but foundations in the ground can still be seen. On the land side this castle was surrounded by a deep ditch which is now filled up with stones; on the riverside the shore is very steep. About one hundred feet below the castle, just above the river, the foundations of a pier of a bridge can be seen, and also on the opposite shore there are traces of masonry. Thus we see that the purpose of the castle was to protect a bridge.

The erection of a bridge across the Indus, of only about three miles off the *Balu mkhar* bridge, is surprising, and the only reason to account for it can be that it was built in rivalry to the *Balu mkhar* bridge, to draw the trade away from there. The disadvantage of the *Balu mkhar* bridge, as compared to this new bridge, is that the merchants were obliged to travel on the left shore of the Indus over very uneven ground for a distance of about four miles. They were saved this unpleasant part of the journey if they crossed the Indus already at the site of the Dard castle. And thus it is very probable that the *Balu mkhar* bridge lost its importance for the Indian trade as soon as this new bridge was constructed.

There are several rock-carvings of some interest in the vicinity of this castle, among them a fight between two horses. This seems to have been a favourite sport with the ancient Dards, for representations of horse fights on rocks do not belong to the very rare types of rock-carvings. But the drawings are generally not so detailed as they are here. It is strange, however, that on a drawing of full figures of animals, as we have

it here, the legs are indicated only by single lines. Of particular interest is a short inscription on a boulder in the vicinity of the castle in characters which approach the Tibetan, but which I find it impossible to read from a Tibetan point of view. I have discovered two more inscriptions of this half-Tibetan type, one half-way between Khalatse and *Nyermu*, the other between *Gadpa sngonpo* and *Ullu drogpo*, near a very extensive ancient gold-mine, and I feel much inclined to bring them in connection with the ancient Dards of this country.

A few steps east of the ancient castle are several ruined *mchod rten*, two of them very large, the largest at Khalatse. They are popularly called *mGo chen mchod rten*, or "Big-head *mchod rten*." It is very probable that they have something to do with the ancient castle. They may be the burial-places of the last of the old kings of Khalatse, after they had adopted Lamaism.

The power of these kings probably came to an end when the West Tibetan king of Leh, *Naglug*, in c. A.D. 1150 "founded Khalatse." *Naglug* built the *Bragnag* castle on the rock overtowering Khalatse, and the first bridge in its present place, a mile below that of the Khalatse kings. He being undisputed master of the place, wanted to make the trade his own, and therefore built the new bridge which saved the merchants the last mile of bad road on the left shore ; for in those days in whose hands was the most convenient bridge, was master of the trade. An inscription which only speaks of "the great king," but which may be attributed to *Naglug* with much probability (as I have shown in another article for the *Indian Antiquary*) contains the record of the erection of the bridge. On two neighbouring boulders we find inscriptions of kings whose names cannot be found in the *rGyalrabs*, the chronicles of Ladakh. They are very likely the names of the last kings of Khalatse. Two names can be read with certainty : *Shirima* and *rGyashin*. Perhaps the name *Khrio'd* which can be read on another boulder, is that of another of those kings, although the word 'king' cannot be found on the same boulder. *Shirima* does not appear to be a Tibetan name : it may be Dard. This line of kings does not seem to have lasted much after A.D. 1150. Probably they gave offence to the great king of Leh in some way or other and were overthrown.

'aBrogmo guram chags sa.—This is the name of another place near Khalatse which is considerd to have been Dard. The name means about "Syrup-plantation of the Dard woman." It is situated at the lower end of the Lamayuru gorge where the Wanla brook falls into the Indus. There are no traces of fields to be seen now-a-days, yet the name seems to indicate that there were fields there many years ago, and this is not impossible, as there is water enough in the neighbourhood. Those fields were either irrigated with the water of the Wanla brook, or with that of the little stream which still irrigates the oasis *Skambur* above it. Now-a-days the water of this little stream would not be sufficient for two plantations, but it is quite possible that several centuries ago the climate of Ladakh was somewhat moister.

Below the road on the slope to the Indus there is a little cave with traces of human occupation. It appears as if it had been inhabited occasionally by gold-diggers. I am told that until recently the shore below the cave looked as if it had been terraced, but

that several high waters had destroyed the last traces of fields. The interest in this oasis rests in the fact that there are a few rock-carvings which represent ancient Dards in their national costume, according to the ideas of the present Khalatse people. On one boulder is carved a woman with a basket on her back. Her dress is girded up very high, as the Dard women of *Da* have it when they are working, so that much of the legs can be seen. On her head she has what at first glance looks much like a very narrow cap. It is, however, as Khalatse people explain, the broad end of the little bag which is worn sideways by the Dard women of Da, seen from the front, and in the carving this woman is supposed to turn her full face to the on-looker. For comparison, the head-dress of the Dard women of Da can be referred to in the *Indian Antiquary*, 1905 ("The Eighteen Songs of the Bōnō-nā Festival"), where a photo of a group of Dards is given.

From all this it follows that, according to popular tradition, the tribe of Dards which first cultivated Khalatse was of the same stock as the present Dards of Da. This is of interest, because near the village of Hunupata we find another group of rock-carvings on a rock which represent the ancient inhabitants of that village in long-forgotten costumes. There the characteristics of the dress of the women are : a long, loose gown and a very high pointed cap. This is a costume which is still worn by the Dard women between Kargil and Dras, and from these rock-carvings we presume that the ancient Dards of Hunupata once came from the Dard country between Kargil and Dras. But the costume of the men represented on the rocks of Hunupata is no longer to be found anywhere, and so it is with the costumes of ancient Dard men depicted at Khalatse. The reason is that during the time of the reign of the Ladakhi kings, certain costumes were made compulsory for the different classes of the male population, and they caused the disappearence of the original forms of dress. The ancient costume of the men of Khalatse we find represented on another boulder at *'aBrogmo guram chagssa*. It is a man hunting antelope. He seems to wear something like trousers, and his hat is somewhat of mushroom shape. It is also furnished with a string. Similar hats without string can be found on other rocks below the Dard castle, and at Nyural. On a rock below the Dard castle, on the river, there is also a drawing of a man, hunting antelope, who wears something like a helmet.

Of *Dard customs* several have already been mentioned, for instance their custom of burying the dead, and in this connection the many graves at the Dard castle on the brook. There seem to have been also graves near the castle on the river, for among the debris of that site there is quite a quantity of human bones. Some look as if they were of rather modern origin. Probably the graves were built direct on the walls of the castle. The Dards seem to like to have the graves as close to the houses as possible. Another Dard custom is the stern abstinence, not only from beef, but also from the milk of cows. If I understand them right, they believe that certain demons are watching over their cows, ready to avenge the stealing of milk. The last remnant of this custom at Khalatse is the fact that there are several families in the village who do not eat any beef, although the others eat much, at least, if their cows and oxen die a natural death. Such families are: *Ralupa*, *Sabipa*, *Snumpa*. But even these

people, who do not wish to be called beef-eaters, do not mind eating the flesh of yaks.

As a Dard custom, the Māmani festival [1] was mentioned in the previous paper. It is celebrated in front of a row of *mchod rten* which are supposed to go back to Dard times. When I visited these *mchod rten* a few weeks ago, I noticed clay-tablets in one of them. On examining them, I discovered that the figures printed on them were the same as those found on clay-tablets at a site underneath a boulder, a little above the entrance of the gorge of the Khalatse brook. Under that boulder we noticed a few traces of masonry and discovered a great number of clay-tablets which were of six different types of shape. On two of these types were legends in a non-Tibetan script, one resembling Devanâgarî characters, and the other of a more ancient look. Specimens were sent to Dr. Ph. Vogel, Archæological Superintendent, Lahore, for examination. He stated that the characters were Indian script, in one case of about the eighth or ninth century, in the other case of the eleventh or twelfth century. Of the other clay-tablets from the same site, one showed the figure of Buddha, another that of *'aJam dbyangs* (Mañjughosha), and a third that of the Târâ. That of *'aJam dbyangs* is particularly beautiful. These tablets seem to be of very different dates, as is shown at first sight by the two inscriptions. Still, going by the inscriptions, even the latest of them may be seven to eight centuries old. The three types of tablets which I found in the Māmani *mchod rten* at Khalatse, show the figures of a *mchod rten* of *'aJam dbyang* and of Buddha; as inscribed ones were not found, it is still impossible to date these *mchod rten* with certainty. But we may say so much, that they are probably seven to eight centuries old.

The game of polo was introduced into Ladakh by the Dards. We suppose this from the observation that the further we proceed westward the more we find it played, and the more complicated are the rules of the game. In Khalatse, too, the game used to be played much, and the old playing-ground was situated half-way between the village and the bridge where there are the ruins of a small hall of three walls. This was the hall for the spectators of high rank and the ladies. Now-a-days, the game is not played often, but it is not yet quite forgotten at Khalatse.

To summarize, the following places at or near Khalatse are spoken of as ancient Dard sites : *Balu mkhar* is said to have been Dard, before it became Tibetan ; the ruined castle on the brook ; the ruined castle on the river ; the Māmani *mchod rten* ; the ruins of field-terraces between Khalatse and *Skyin gling* ; the ruined Dard castle at *Skyin gling*.

Later Addition.—The non-Tibetan inscription, Plate XVI, 5, has meanwhile been examined by Dr. Ph. Vogel, Archæological Surveyor, Lahore. He pronounces it to be Indian Brāhmī of the Kushana period (c. A.D. 200-400), and to read as follows :

(śrī ?) saca ma

tisya.

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[1] In the second part of the name Māmani the Dard word *manili*, bread, may be contained in a contracted form.

This is the genitive case of the Sanskrit name Satyamati, *saca* being the North-Indian form of *satya*.

This inscription would thus contain the name of one of the ancient kings of the castle on the river. But the castle may have been Mon and not Dard in those days. And we have a few traces of an ancient colonisation by the Mons, preceding that of the Dards. Perhaps the ancient Mons had a bridge at the same site which was destroyed, and later on rebuilt by the Dards in rivalry to the Balu-mkhar bridge, as stated above.

In this connection it is of some interest that popular tradition speaks of an ancient King Sûryamati (sometimes pronounced Surgamati) who had this castle at Trigtse, above Leh. We see that before the Tibetan conquest, c. A.D. 1000, there were kings in Ladakh who bore Sanskrit names.

PLATE XVI.

Dard Rock Carvings.

No. 1. On a boulder a little below the Dard castle on the river: Man with a helmet, hunting antelope.

No. 2. On a boulder on the starting point on the bridge below the castle on the river, right shore: A foal and an antelope.

No. 3. On the same boulder as No. 1: Two horses fighting.

No. 4. On a boulder on the starting point of the bridge below the castle on the river, left shore: A man, leading a horse, is charged by a fabulous animal.

No. 5. On a boulder among the *mgo chen mchod rten*, near the castle on the river: Inscription in non-Tibetan characters. (See "Later Addition" to paper, p. 418.)

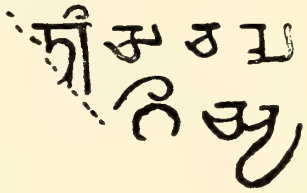
No. 6. On a boulder on the starting point of the bridge, below the castle on the river, left shore: Man on horseback attacked by an archer.

No. 1.

No. 2.

No. 3.

No. 4.



No. 5.

No. 6.

Rock-inscriptions and Carvings from Dard Sites at Khalatse.

PLATE XVII.

Dard Rock Carvings.

No. 7. On a boulder at *'aBrogma guram chags sa* : Group of goats.

No. 8. On a rock at *'aBrogmo guram chags sa* : Goats or ibex ; above them an *om* which was left incomplete.

No. 9. On the same boulder as No. 7 : The Dard woman with a basket and a stick.

No. 10. On a rock at *'aBrogmo guram chags sa* : Inscription in somewhat extraordinary characters, *Om mani badme hu*[*m*].

No. 11. On a rock at *'aBragmo guram chags sa* : Ibex with a bow behind it. The man was not added. Modern inscriptions : *rgya* (= brgya ?), one hundred.

No. 12. On the same boulder as No. 7 : A *yyung drung* or svastika.

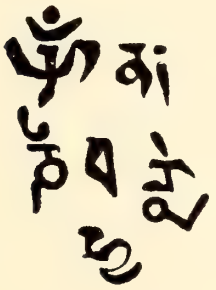
No. 13. On a rock at *'aBrogmo guram chags sa* : Antelope hunter and svastika.

No. 14. On a rock at the little cave below *'aBrogmo guram chags sa* : An antelope and an incomplete drawing probably of a peacock.

No. 7.

No. 8.

No. 9.



No. 10.

No. 11.

No. 12.

No. 13.

No. 14.

Rock-inscriptions and Carvings from Dard Sites at Khalatse.

PLATE XVIII.

Dard Remains at Khalatse.

Fig. 1. View of the greater part of the ruined castle on the brook.

Fig. 2. Ruined terraces below the same castle.

Fig. 3. Ancient stone mortar in the "Valley of the Mortar."

Fig. 4. Group of three ancient *mchod rten* above the castle.

Fig. 5. Skeleton of Dard in his grave, from above.

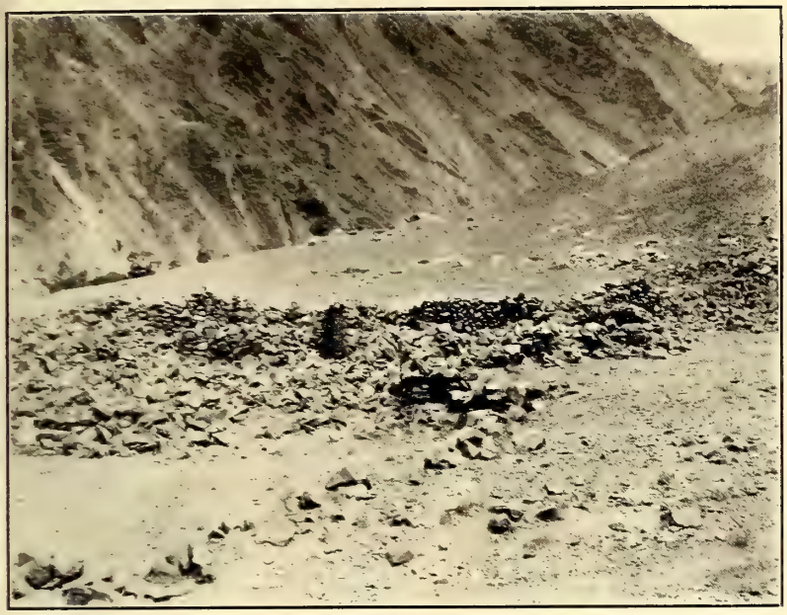


Photo by P. E. Bernard.]

Fig. 1.

Photo by P. E. Bernard.]

Fig. 2.

Photo by P. E. Bernard.]

Fig 3.

Photo by P. E. Bernard.]

Fig. 4.

Photo by P. E. Bernard.]

Fig 5.

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1905-1906.

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

VOL. I, SUPPLEMENT, pp. i–v.

Plates A, B, C.

MISCELLANEA ETHNOGRAPHICA, I.

BY

N. ANNANDALE, D.Sc.

SMITHSONIAN INSTITUTION
OCT 16 1940
NATIONAL MUSEUM

CALCUTTA:
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Miscellanea Ethnographica.

PART I.

By N. ANNANDALE, D.Sc.

INTRODUCTION.

It is proposed to issue, as a supplement to the *Memoirs of the Asiatic Society of Bengal*, a series of figures and brief descriptions of objects of ethnographical interest from India and the neighbouring countries. The assistance of members of the Society is invited, and the Anthropological Secretary will gladly receive for publication photographs, drawings and notes suitable for these "Miscellanea." The three plates issued in the first part represent objects of which many are common in their proper localities. It is important for this very reason that an accurate record of them should be preserved, as the changes which take place as regards the common implements, weapons, apparatus and the like of more or less primitive tribes, at the present day are rapid and extensive. Not only are objects of local use and manufacture often of ethnographical interest, but still more frequently they illustrate the history of civilization in its mechanical and psychological aspects and render it possible to trace the path whereby the material triumphs of certain forms of culture have been achieved. Very little has been done in India as regards this branch of anthropology; but it is hoped that if members of the Asiatic Society who have the opportunities—and many such there be—will give their assistance by supplying information and figures for publication, something may be done at any rate in furnishing materials for more detailed study, and in preserving from oblivion interesting relics of the past which would otherwise disappear without a trace.

The Blow-Gun in Southern India. (Plate A.)—

The blow-gun consists essentially of a hollow tube through which missiles are propelled by the human breath. Its simplest form is illustrated by the "pea-shooter" of the English schoolboy; but as a serious weapon or implement of the chase it is confined to south-eastern Asia and South America. In Asia it is used by various primitive tribes in Malaysia, from whom its use has spread to Southern India. Three main types of construction can be recognized in Asiatic specimens; (1) a bamboo tube (generally double, *i.e.*, one tube within another), used by the marjority of the jungle tribes of the Malay Peninsula; (2) a tube made of a cylinder of wood split longitudinally, hollowed out, and then bound together again, used by certain Negrito tribes in Pahang (Malaya); and (3) a tube hollowed out of hard wood. The last type, to which one of the specimens figured belongs, reaches its highest perfection in North Borneo. The blow-gun as a weapon is practically confined, in Asia, to Indonesian tribes and to those to whom they have taught its use. Small poisoned darts are the missiles commonly used.

While visiting the subdivision of Rámanád in the coast of the Madura district of

Madras in the summer of 1905, I heard that there were, among the Muhammadan people known locally as Lubbais or Labbis, certain men who made a livelihood by shooting pigeons with blow-guns. At Kilakarai, a port on the G. of Manaar, I was able to obtain a specimen, as well as particulars. The latter were given me in Malay.

According to my Labbi informants, the " guns " are purchased by them in Singapore from Bugis traders and brought to India. There is still a considerable trade, although now diminished, between Kilakarai and the ports of Burma and the Straits Settlements. It is carried on entirely by Muhammadans in native sailing vessels, and a large proportion of the Mussalmans of Kilakarai have visited Penang and Singapore. It is not difficult to find among them men who can speak Straits Malay. I was told that at the time of my visit six hundred men from Kilakarai alone were known to be in Singapore. The local name for the blow-gun is *senguttán* and is derived in popular etymology from the Tamil *sen* (" above ") and *kutu* (" to stab "). I have little doubt that it is really a corruption of the Malay name of the weapon—*sumpitan*.

The blow-gun [1] which I obtained, measures 189·6 cm. in length : its external diameter at the breech is 30 mm., and at the other extremity 24 mm. The diameter of the bore, however, is practically the same throughout, *viz.*, 12 mm. Both ends are overlaid with tin and the breech consists of a solid piece of tin turned on a lathe and pierced, the diameter of the aperture being the same as that of the bore. The solid tin measures 35 mm. in length and is continuous with the foil which covers the base of the wooden tube. The tube itself is of very hard, heavy, dark wood, apparently that of a palm. It is smooth, polished and regular on its outer surface, and the bore is extremely true and even. At a distance of 126 mm. from the distal extremity, at the end of the foil which protects the tip of the weapon, a lump of mud is fixed on the tube as a " sight." The ornamentation of the weapon is characteristic and shows that it must have been made in North Borneo. It consists of rings, leaf-shaped designs with an open centre, and longitudinal bars, all inlaid with tin. My figures may be compared with that of a specimen, now in the Oxford Museum, from North Borneo which is figured by Ling Roth in his " Natives of Sarawak and British North Borneo " (Vol. II, p. 185). The missiles used at Kilakarai were not darts but little pellets of soft clay (fig. 1*e*) worked with the fingers immediately before use.

The specimen figured will be sent to the Pitt–Rivers Museum at Oxford.

Although a " sight " is used in some Bornean blow-guns, I was told, probably correctly, that the lump of mud on the Kilakarai specimen had been added in India. I was also told that it was the custom at Kilakarai to lengthen the tin breach of the " gun " in accordance with the capacity of the owner's lungs. He first tried the tube by blowing a pellet through it, and, if he felt that he could blow through a longer tube, he added another piece of tin at the proximal end. It is said that blow-guns entirely of brass or copper are occasionally made in the Madura district, but I could neither see a specimen nor get definite proof of the existence of one. The use of pellets of clay instead of darts is probably an Indian makeshift.

---

[1] A brief record of this specimen appeared in *Man*, 1906, art. No. 15.

The method in which the pellet is expelled from the gun differs somewhat from that which in Malaysian tribes expel the dart. At Kilakarai the pellet is placed in the mouth, into which the butt of the tube is also introduced. The pellet is then worked into the tube with the tongue, and is propelled by a violent effort of the lungs. No wadding is used. Aim is rendered inaccurate, in the first place by the heaviness of the tube, a fault inherent in this form of blow-gun, and secondly by the unsuitable nature of the missile. Twenty-five feet is probably the limit of distance at which a pigeon can be killed, whereas the aim of a Sakai (who uses a small pointed dart with a cone of some light substance at its base, stoppers up the tube with a vegetable wadding behind and does not take the end of the "gun" into his mouth) is accurate up to twenty-five yards.

Fig. 2 on the same plate represents a toy blow-gun, also from Kilakarai. It was used as a plaything by a Labbi boy and consisted merely of a hollow cane with a flat piece of tinned iron, probably from a biscuit-tin, twisted round the butt and fastened by soldering the two ends together. Pellets of clay were used as missiles, but without much effect. I have seen pieces of the cane used in making pipe-stems employed in a similar way by Bengali boys in the Calcutta bazaars.

Mr. I. H. Burkill tells me that he has evidence of the existence, either at the present day or formerly, in Eastern Bengal or Assam of a blow-gun with darts. Further information on this point would be of value.

Fig. 3 represents the two specimens from Kilkarai side by side with a Sakai blow-gun made of the Long-noded Bamboo, *Bambusa Wrayi*, from the mountains of Perak in the Malay Peninsula.

Miscellaneous objects from the Rámanád subdivision of the Madura district. (Plate B.)—

Although there is comparatively little to be said about the figures on this plate, they are of interest as illustrating several customs characteristic of a somewhat remote district in Southern India. Most of these customs are by no means confined to the subdivision of Rámanád. The photographs and specimens illustrating them were obtained there by myself in the summer of 1905.

Fig. 1 represents a stone burden-rest of a kind common in many parts of Southern India. It consists of two or three upright stones more or less carefully worked, with another stone laid across them horizontally. Frequently there is an inscription on the upper stone stating by whom or in whose honour the structure was erected. These burden-rests are set up by wayside shrines, market-places, bathing and watering tanks, that coolies and others may rest their loads upon them while they pray, wash themselves, drink, or buy food. At least one porter's rest of a similar form, but made of wood, still exists in London. Porters formerly placed their burdens upon it while resting, and the contrivance has probably a wide if sporadic distribution.

The tradition in Rámanád is that the stone burden-rests, which are now put up by well-to-do Hindus merely as an act of charity or in honour of distinguished persons, were originally erected when a pregnant woman died without giving birth to her child,

the belief being that the action benefited the two persons who were thus buried together. Apparently the woman's body was not burnt.

Fig. 2 is a photograph of a camp of Koravars on the outskirts of the town of Rámanád. These people form a nomadic and criminal tribe which has its headquarters in, if it is not confined to the sub-division. Judging from their appearance, they do not belong to the aboriginal population, but are probably descended from outcastes from other communities. They live an unsettled life, wandering about the country accompanied by large herds of pigs, which closely resemble the Indian wild boar. They also make baskets and bore the ears of Hindu girls belonging to the lower castes; but their main occupation is that of thieving. They are adepts at disguising themselves, at proving an *alibi* by long and secret marches, and at concealing stolen property. Their only abodes are the huts represented in the photograph. These are made of mats manufactured from strips of the leaves of the Palmyra palm (*Borassus flabellifer*) stretched on a few sticks. One man can easily carry the materials of a hut for a long distance.

The objects represented in figs. 3 (*a*, *b*, *c*, *d*, and *e*) are figured of the natural size. They are toys and ornaments made by Muhummadan women at Kilakarai on the Gulf of Manaar, the materials being catechu heated over the fire and worked with the hands while still in a plastic state. Such ornaments (*e.g.*, that represented by fig. 3*d*) are often ornamented with the little, hard, scarlet-and-black seeds (*Abrus precatorius*) so frequently used in ornamental work in different parts of India. Some much more elaborate specimens were obtained, one representing an elephant with a howdah on its back, but were unfortunately broken on the journey to Calcutta.

Fig. 4, 4*a* are photographs of the marriage-tokens worn by Hindu women of the lower castes. They are made of cane and hung round the neck on a string by every married women. The circles and cross-lines upon them are roughly scratched with a knife and blackened with oil, which is rubbed into them.

The rings figured in figs. 5 and 5*a* are made of lead and were worn in the ears of of low-caste Hindu girls, in order to stretch the lobes. The lobes are bored when the girl is only a few years old and a tight roll of cloth or palm-leaf introduced into the aperture. This is gradually increased in size by the introduction of larger rolls, until it is big enough to hold a lead ring. First one and then several such rings are introduced, until there may be, when the girl is about seven years of age, as many as five rings in each ear. Later, they are removed and the stretched lobe is ornamented with gold ornaments according to the means of the girl's family.

Indian Weighing-beams. (Plate C.)—

The specimens figured in this plate belong to a type of weighing-beam which has neither a pan for weights corresponding to the pan in which the object to be weighed is placed, nor free weights which can be moved along a scale on the beam or suspended therefrom at a definite point. In this type the butt of the beam is itself heavy, and the point at which the beam is suspended can be altered, the change in leverage thus induced compensating for a certain weight, which is noted on a scale marked on the beam. The beam so constructed is conveniently known as a *bismer*, the name being of

Scandinavian origin and Scandinavia being the centre of dispersal in western Europe. The bismer occurs in almost all countries in the west of Europe in which Scandinavian influence is or has been strong, but, it is now obsolete in many districts (*e.g.*, Orkney and the Outer Hebrides) and is not known to exist in Iceland, in which the scarcity of wood may account for its disappearance. Its distribution in Asia is still very imperfectly worked out. The beams figured come from the Madura district (S. India), Eastern Bengal, and the Punjáb.

Fig. 1 on the plate represents a specimen obtained by myself in the Rámanád division of the Madura district in 1905. The beam measures 52·8 cm. in length and is figured a quarter of the true size. It has been turned on a lathe out of extremely heavy, dark wood, and no additional weight has been added to the butt. The butt is ornamented with plain, transverse, engraved rings arranged in groups of threes and fours. On the upper surface, a little nearer the free end than the centre, there is a cross of five dotted circles inlaid with white metal. The scale is marked in the same manner (fig. 1*a*), the degrees being indicated by single circles, or groups of three circles, each circle dotted in the centre and transversed by a line. Circles, dots and lines are all inlaid with white metal. The circles appeared to have been made with the aid of a pair of compasses and their centres are indicated accurately. The suspender is a piece of twine. The pan is plaited out of strips of palm-leaf and is suspended by two loops of twine, which are tied together just below the beam and have their free ends knotted above it. Different specimens from the same district differ considerably as regards the scale on the beam. Dr. A. Willey, F.R.S., has kindly sent me a sketch of a very similar specimen from Ceylon in the Colombo Museum.

Fig. 2 represents a specimen from the Punjáb and is one-third of the true size. In this specimen the beam is of iron and the pan of some alloy, suspended by two loops of twine. The scale is engraved deeply on the beam. It is represented of the true size in fig. 2*a*.

Fig. 3 represents a specimen from the Dacca district. It is represented as one-half the true size. The beam has been turned on a lathe. It is of common, rather light wood. The scale is represented by four incised rings. The suspender is a piece of twine and the pan is represented by two loops of the same material.

The last two figures are from specimens in the Economic Section of the Indian Museum. I have to thank Messrs. I. H. Burkill and D. Hooper of that section of the Museum for permission to examine them and have them drawn.

EXPLANATION OF PLATE A.

Fig.—1. A North Bornean blow-gun introduced into the Madura district, Southern India ; Kilakari, Gulf of Manaar.

1—a Labbi man using the blow-gun ; 1*a*—the distal end of the "gun," showing the mud "sight," the tin sheath, and the ornamentation of tin-foil ; 1*b*—tin breach of the "gun," showing ornamentation, etc. ; 1*c*—aperture at the breech ; 1*d*—aperture at the other end ; 1*e*—clay pellets used as missiles. Figs. 1*c*, 1*d*, 1*e*, are of the true size ; figs. 1*a* and 1*b* reduced by half.

Fig. 2.—A toy blow-gun of cane from the same locality.

Fig. 3.—Blow-guns from South India and Malaya.

a—foot scale ; *b*—the specimen figured in fig. 1 ; *c*—a bamboo blow-gun from the mountains of Upper Perak ; *d*—the specimen figured in fig. 2.

EXPLANATION OF PLATE B.

Miscellaneous Objects from Rámanád.

Fig. 1.—Stone burden-rest, Rámanád. The pyramidical roof in the background is that of a shrine of Ganesh, the Elephant-God.

Fig. 2.—A Camp of the Koravars, Rámanád.

Figs. 3*a*, *b*, *c*, *d*, *e*.—Toys and ornaments of catechu from Kilakarai, Gulf of Manaar: *a*—a hurricane-lamp of European design; *b*—a bullock-cart; *c*—a cocoanut-scraper; *d*—an ornamental vase; *e*—a hanging lamp. All × 1.

Figs. 4, 4*a*.—Marriage tokens of cane worn by low-caste Hindu married women in Rámanád. × 1.

Figs. 5, 5*a*.—Lead earrings worn by low-caste Hindu girls in Rámanád to stretch the holes of the ears. × 1.

EXPLANATION OF PLATE C.

Indian Weighing-Beams.

Fig. 1.—Weighing-beam from Madura district, S. India. $\times \frac{1}{4}$.

Fig. 1*a*.—Scale on the same. $\times \frac{1}{3}$.

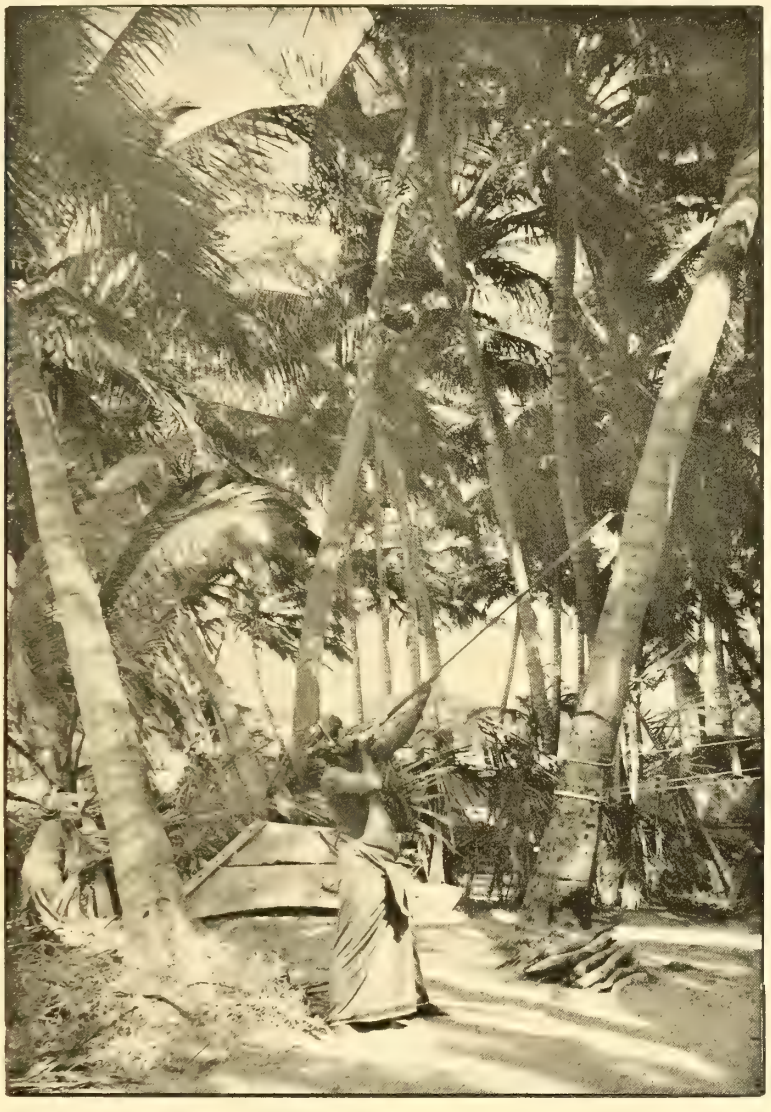
Fig. 2—Iron weighing-beam from the Panjáb. $\times \frac{1}{3}$.

Fig. 2*a*.—Scale on the same. $\times 1$.

Fig. 3. Weighing-beam from Dacca district, E. Bengal. $\times \frac{1}{2}$.

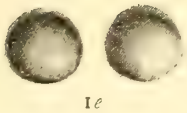
2

1*b*

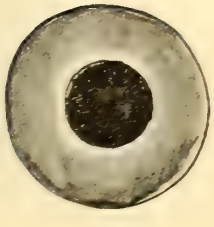


1

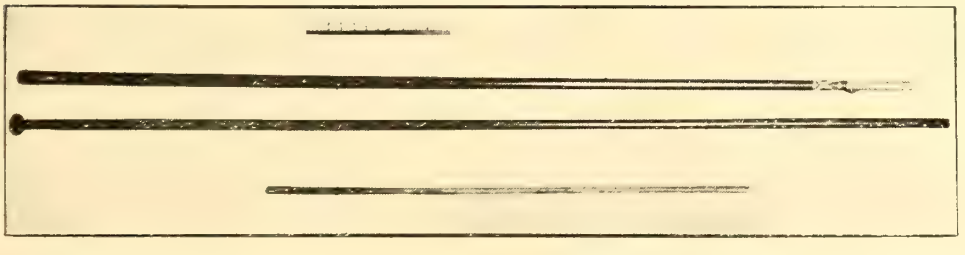
1*a*



1*e*



1*c*



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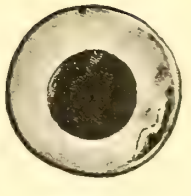


1*d*

THE BLOW-GUN IN SOUTHERN INDIA.

a b c

5a

3

5a

4a

1

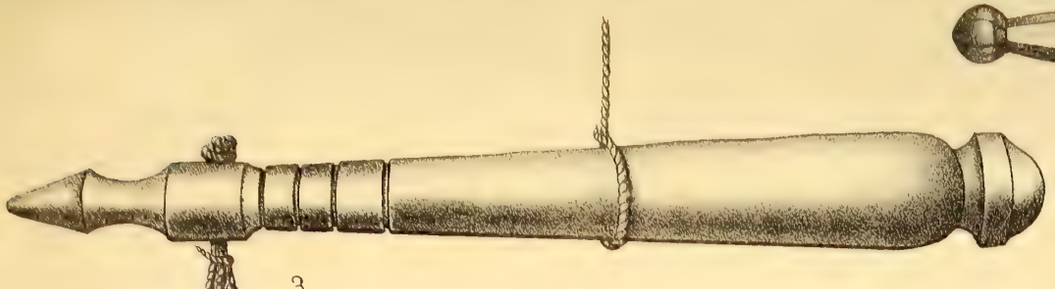
4

3d

2

3e

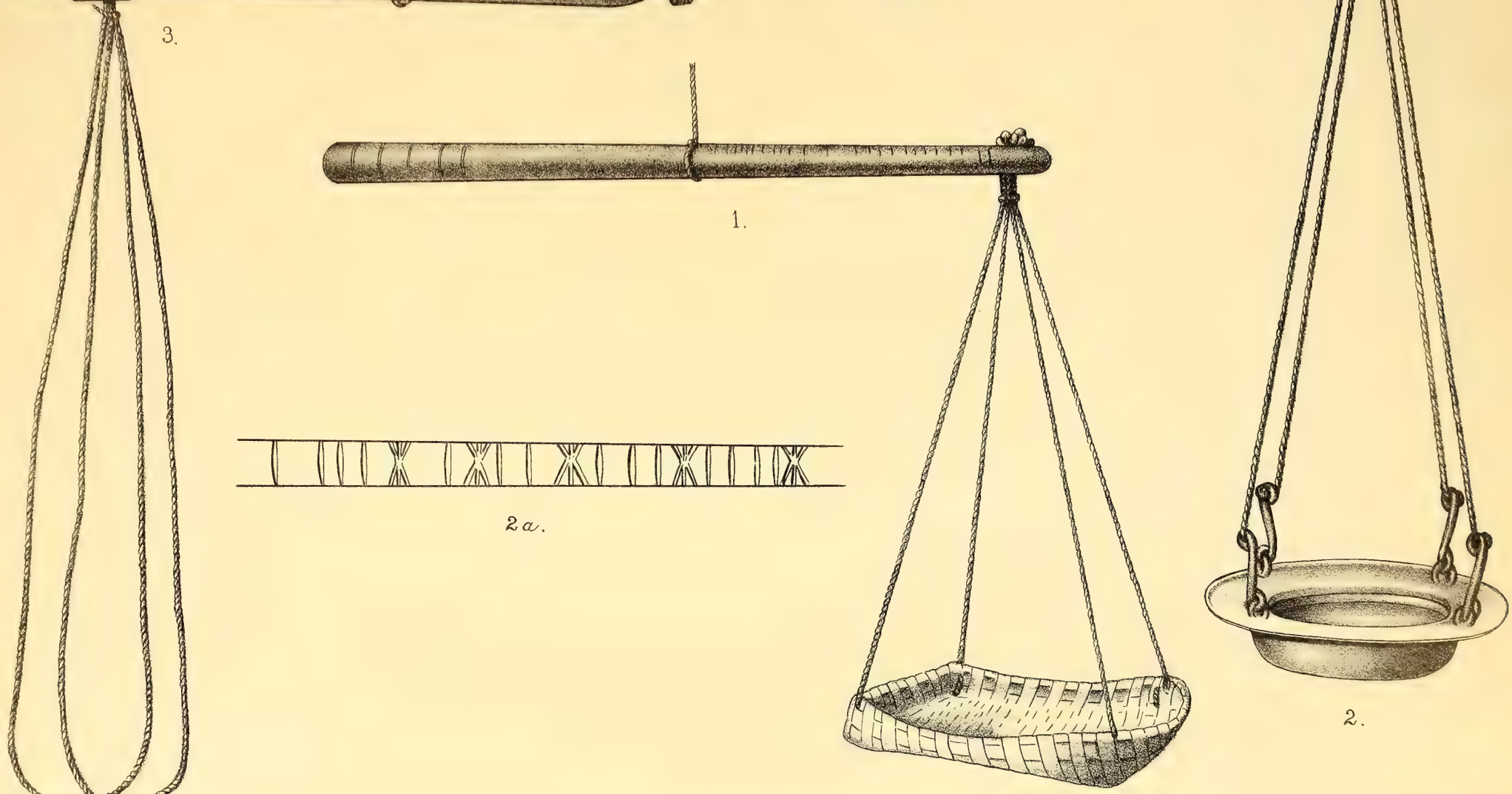
Miscellaneous Objects from Rámanád, S. India.



3.

1.

2a.



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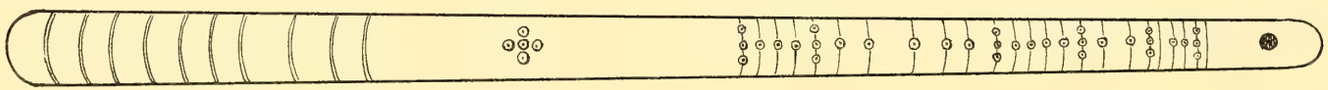

1a.

A.C. Chowdhary, del & lith.

INDIAN WEIGHING-BEAMS

Memoirs of the Asiatic Society of Bengal.

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

VOL. I, SUPPLEMENT, pp. ix–xi.

Plates D, E, F.

MISCELLANEA ETHNOGRAPHICA, II.

BY

N. ANNANDALE, D.Sc.

AND

LIEUT. COLONEL D. C. PHILLOTT.

CALCUTTA:

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PART II.

Some Malayan Weapons. (Plates D. and E.)

I had intended to give with these two plates, which have been awaiting publication for some little time, an account of the various types of the kris which occur in the northern part of the Malay Peninsula; but stress of additional official work has rendered it impossible for me to devote sufficient time to the scattered literature[1] on the subject, and I have therefore decided, in order not to delay the issue of another part of these "Miscellanea" longer, to publish the two plates merely with a brief description of the specimens figured.

Plate D represents three specimens in my own collection, all from the small states on the east coast of the Malay Peninsula which once formed the kingdom of Patani and are still commonly known as Patani among the Europeans of the Straits Settlements. Figures 1 and 2 on this plate are drawn of half the true size, and give the outline of two examples of the type known locally as *krīs tajang* and sometimes referred to in ethnographical literature as the "kingfisher" kris. The latter name is due to a legend that the handle of this type is a portrait of a Bugis chief (sometimes he is said to have been a Sumatran Malay) nicknamed Kingfisher (*Perkāka*) on account of his long nose. This type of handle appears to be peculiar to the Patani States and Kedah; in the British states it is regarded as uncouth and barbarous, and I have seen no specimens exactly agreeing with it from the Archipelago. Both figures show clearly the chief points characteristic of this kris (apart from its sheath, which is represented in Figure 10, Plate E); these peculiarities are the elaborately carved handle, which is generally made of some hard wood but occasionally of ivory or even pewter, and the short, straight blade, which is rarely damascened. Properly this type of handle should not be ornamented with silver or brass, but only with gold or *suāsa*, an amalgam of copper and gold. The eyes of the figure should be made of one of the two latter materials, while the flat spaces on the top of the head and the band at the base of the handle should be covered with plain plates; but frequently these ornaments are omitted. The carving of the wood (Fig. 1) is often very elaborate. The sheath is always considerably longer than the blade, and is ornamented above with two graceful projections known as "bull's horns" (*tandu lembu*). The carving of the handle figured in Plate E, Fig. 10, is unfinished; specimens are frequently met with in this condition. The carving of the one figured in Plate D, Fig. 1, is so elaborate that I am inclined to believe that it was done by a Chinaman following the conventional Malay design. Fig. 3 on the same plate represents an example of a very unusual type which

[1] See especially Newbold's *Political and Statistical Account of the British Settlements in the Straits of Malacca* (1839), Skeat's *Malay Magic* (1900).

I bought in the town of Patani. It was called a "cock kris" (*krīs ayam*) by the man from whom I bought it, and appears to have belonged to a member of the theatrical profession. The handle is carved out of soft wood, gilt, painted red and blue, and decorated with artificial saphires and emeralds. As the supply of these had evidently been limited, their place is taken on one side by drops of similarly coloured resin. This is the only specimen of the type I have seen.

Plate E was designed to show the evolution of what is nowadays perhaps the most common type of kris handle, namely that figured in Fig. 4, which represents an example from the Patani States in my own possession. Figs. 5 and 6, representing closely allied types, are from Javanese examples which probably belonged to Sir Stamford Raffles and are now in the Industrial Section of the Indian Museum. Figs. 1, 2, 3, 7, 8 represent an interesting series selected from the fine collection in the Royal Scottish Museum in Edinburgh, to the Curator of which I am indebted for photographs of them. Unfortunately their exact *provénance* is doubtful, but probably most, if not all of them are from Java or Bali. The type represented in Fig. 4 is known to the Malays of Patani as *krīs jawi demam* (probably short for *krīs orang jawi berdemam*), the "kris of the fever-stricken Javanese." The resemblance to a man sick with fever and clutching his chest with both arms is striking, especially when it is considered in the light of a study of the forms figured in the same row. Fig. 9 represents a knife (? ceremonial) from Java in which the blade is cut out into a figure somewhat resembling that represented by the handle of the *krīs tajang*. The knife is of the general type (with a short, somewhat curved blade set on a rather long handle) known to the Patani Malays as *pīsau raut* or "peeling knife" and used largely in splitting and peeling rattan (Malay, *raut-an*, the "peeled thing"). The specimen is from the same collection as the handles figured in Figs. 6 and 7 on the same plate. I am indebted to Messrs. I. H. Burkill and D. Hooper, of the Industrial Section of the Museum, for the opportunity of figuring these specimens.

N. ANNANDALE.

——o——

Plan of a Persian Gentleman's House. (Plate F.)

The diagram illustrates the plan of a Persian gentleman's house, of a style rather old fashioned. Such houses are single-storied and are built of flat, square, kiln-burnt bricks. As wood is scarce, there are no beams in the roof, which is flat, except for a dome in the centre of each room. It is owing to the excellent cement (*gach* or gypsum), which is abundant in Persia, that the roofs can be constructed as they are, out of flat bricks with no supporting beams or pillars. The whole of the outside of the house, including the roof, is covered with a plaster made of mud and chopped straw.

The inside of the rooms and of the ceilings is lined with snow-white hard cement. The pattern of the ceiling is exceedingly intricate and difficult to describe. Viewed from the inside, it is as though the centre dome had four arches cut out of it, half of a smaller dome springing out of each arch. From each of these dependent

semi-domes, again spring other smaller semi-domes, and so on. There is a large fireplace (with a chimney) and a mantle-shelf, both made out of white cement. The doors are numerous [1]; they have a great deal of glass in them, and are usually secured by a chain and staple. The floors are paved with flat, square, bricks, each set of rooms having a plinth. The floor of one or two of the rooms is generally raised as much as two or three feet above the courtyard. One end of a room is frequently made into a platform about the height of a chair. This is called a *tambal-khāna*, which may be translated 'lolling place.' It is carpeted with felt, and furnished with pillows or cushions. The whole of the floor, too, is covered with a thick brown felt, and for furniture there are a few carpets. In the walls are arched niches, which are used as shelves. There are also two narrow ledges, called *raff*, that run round the room, one low and one high; these are used as shelves for small articles. Everything inside a room must be symmetrical: if there is a carpet of a certain size and pattern [2] in one corner, it must be balanced by its exact counterpart in a corresponding corner. A clock, or an oleograph of the Shah on one side of the mantlepiece, must be balanced by a precisely similar clock or oleograph on the other. To have a portrait of a king on one side, and of a queen on the other, would, to a Persian eye, be upsetting.

The courtyards are paved with flat bricks. If there is no tank with fountain, there is usually a flower bed. Probably there is a cypress tree, or two, and a wild rose, and perhaps a Judas tree.

The kitchen fireplaces (*ujāq*), which are numerous, are made of brick, and are often ornamented. They are nearer to an English kitchen range in pattern than to an Indian *chūla*. Even in the houses of the poor, the fireplace admits of cooking being carried out in an erect position.

The rooms and the courtyards are kept spotlessly clean. The water in the tank may be green and foul, and, though not used for drinking purposes, tea cups may be washed in it. If the water is sufficiently pure, there are usually some gold and silver fish in the tank.

Many houses have a Turkish bath attached.

The *tālār* is a verandah, or rather a living room; it has pillars on one side, no doors, and looks on to the open-air courtyard: it is in fact a living room permanently open on one side.

The open-air or summer stable has mangers let into the wall at regular intervals.

In suitable places outside the outer wall, and also in the open-air stable, there are basin-like depressions in the walls with a stout stick let in across them: these are for tethering animals.

The word *shikasta* in "*si-darī-yi shikasta*" means that either a corner has been partitioned off, or that one of the walls is not continuous, being perhaps "broken" for an entrance to a flight of steps.

D. C. PHILLOTT.

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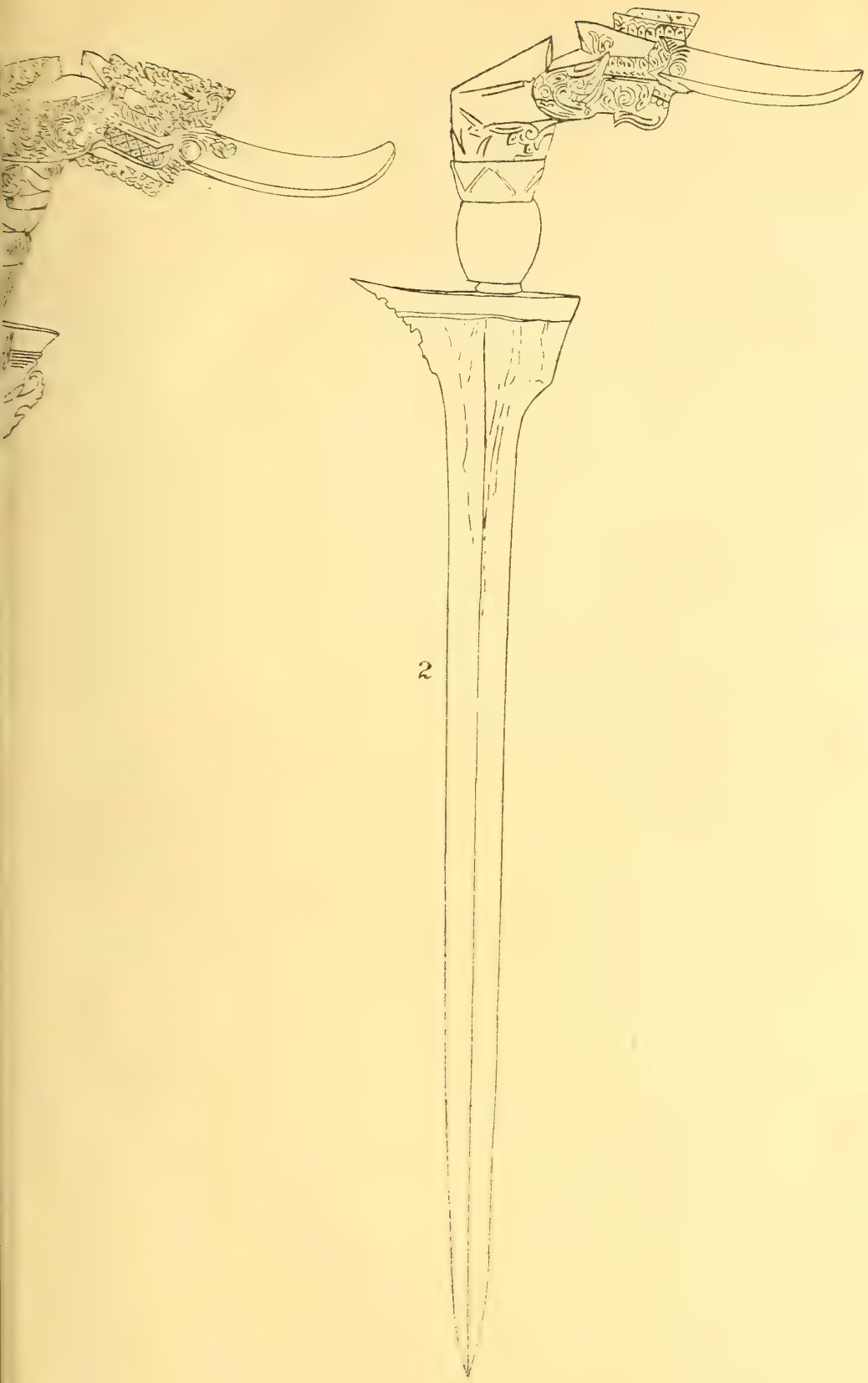
[1] One room the writer used had thirteen glass doors.

[2] Carpets are always woven in pairs, except by the tent-folk.

3



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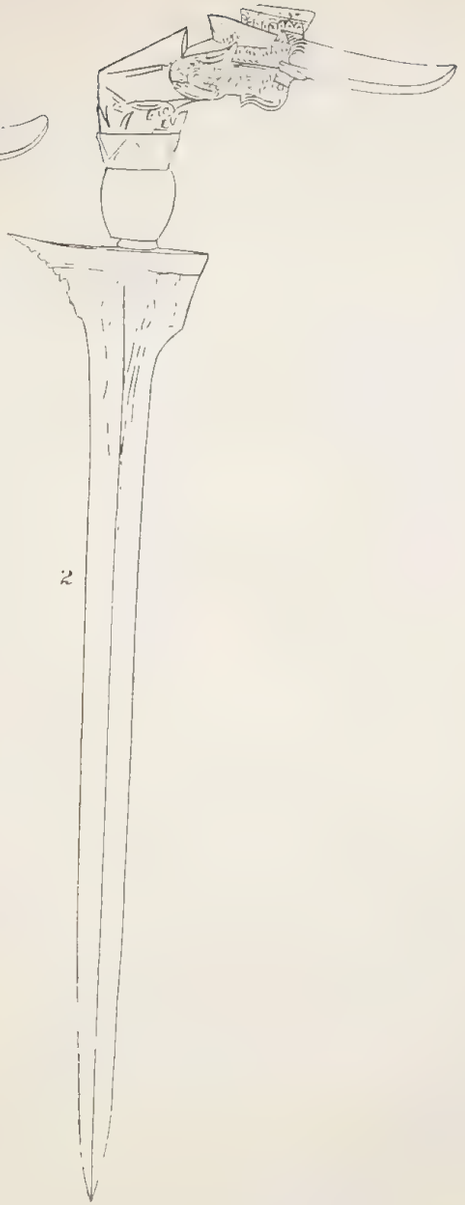

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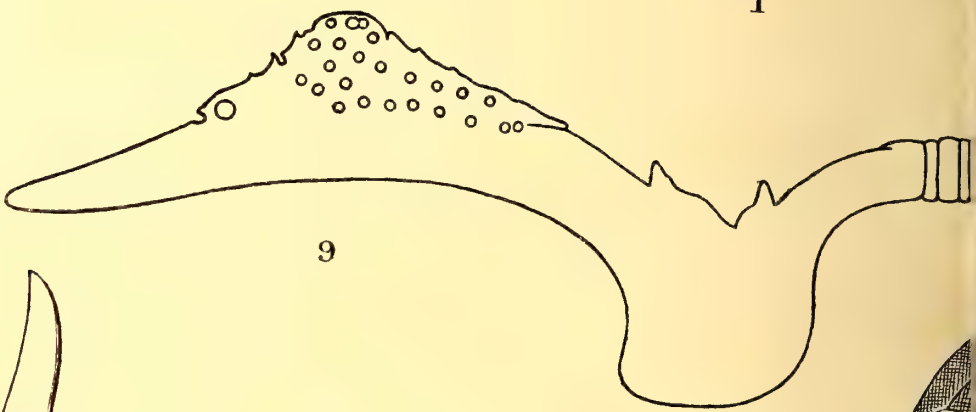

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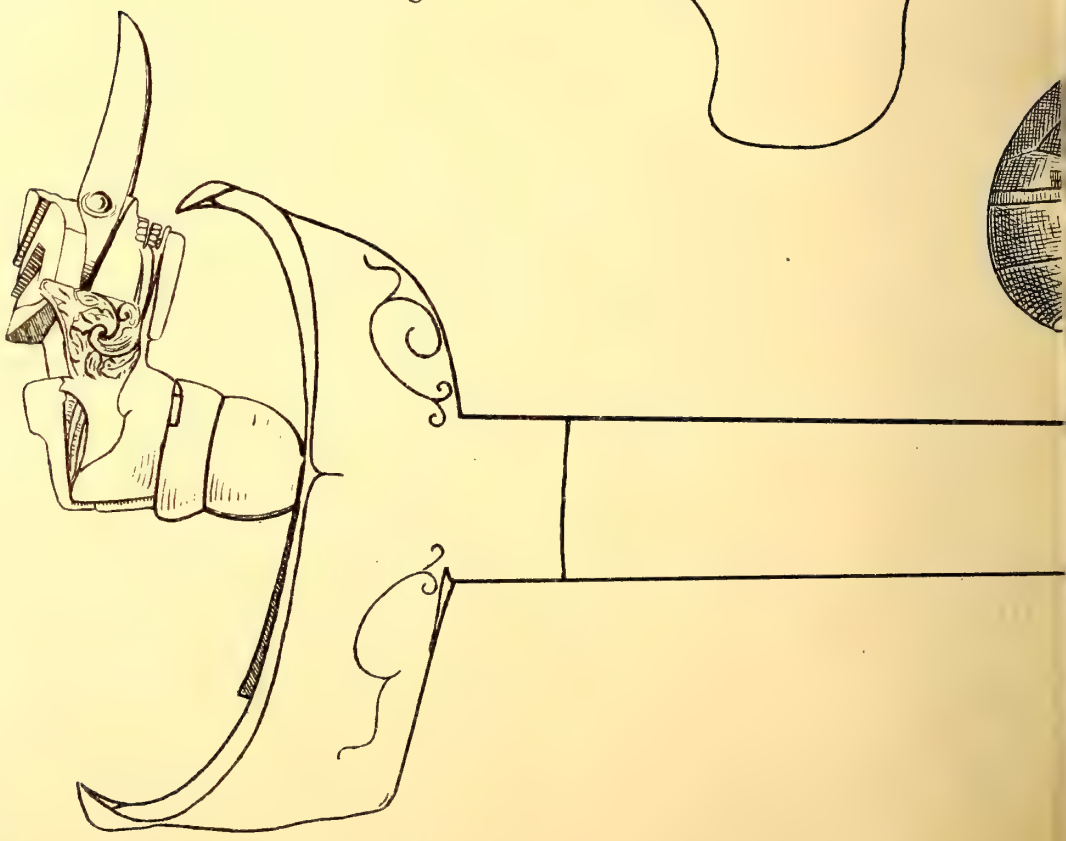

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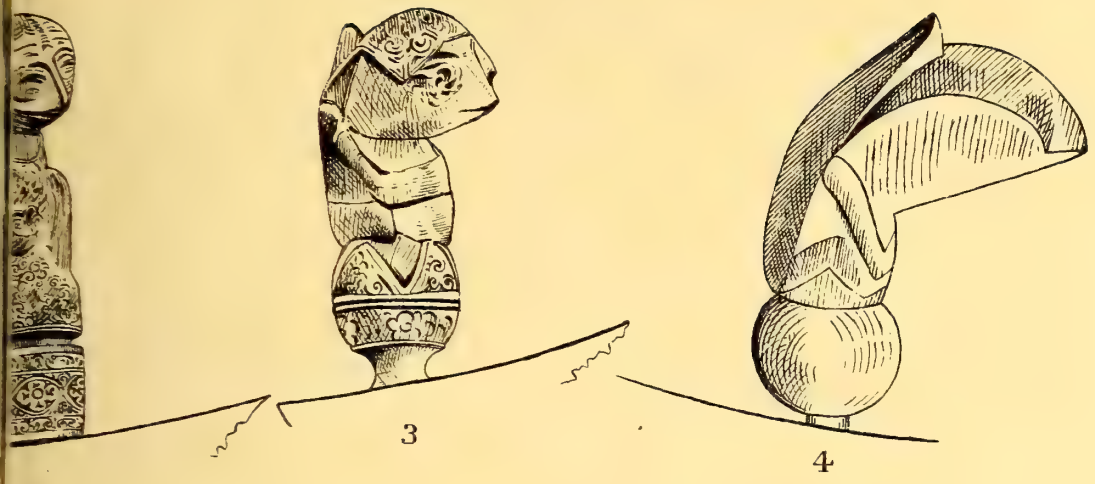

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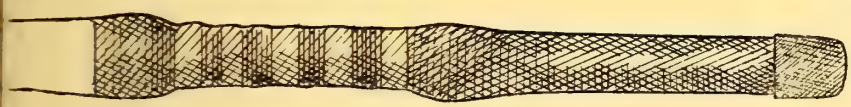

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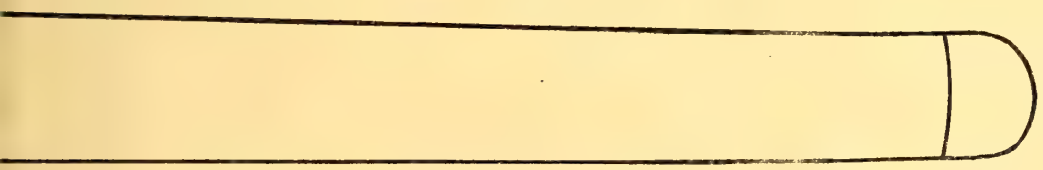

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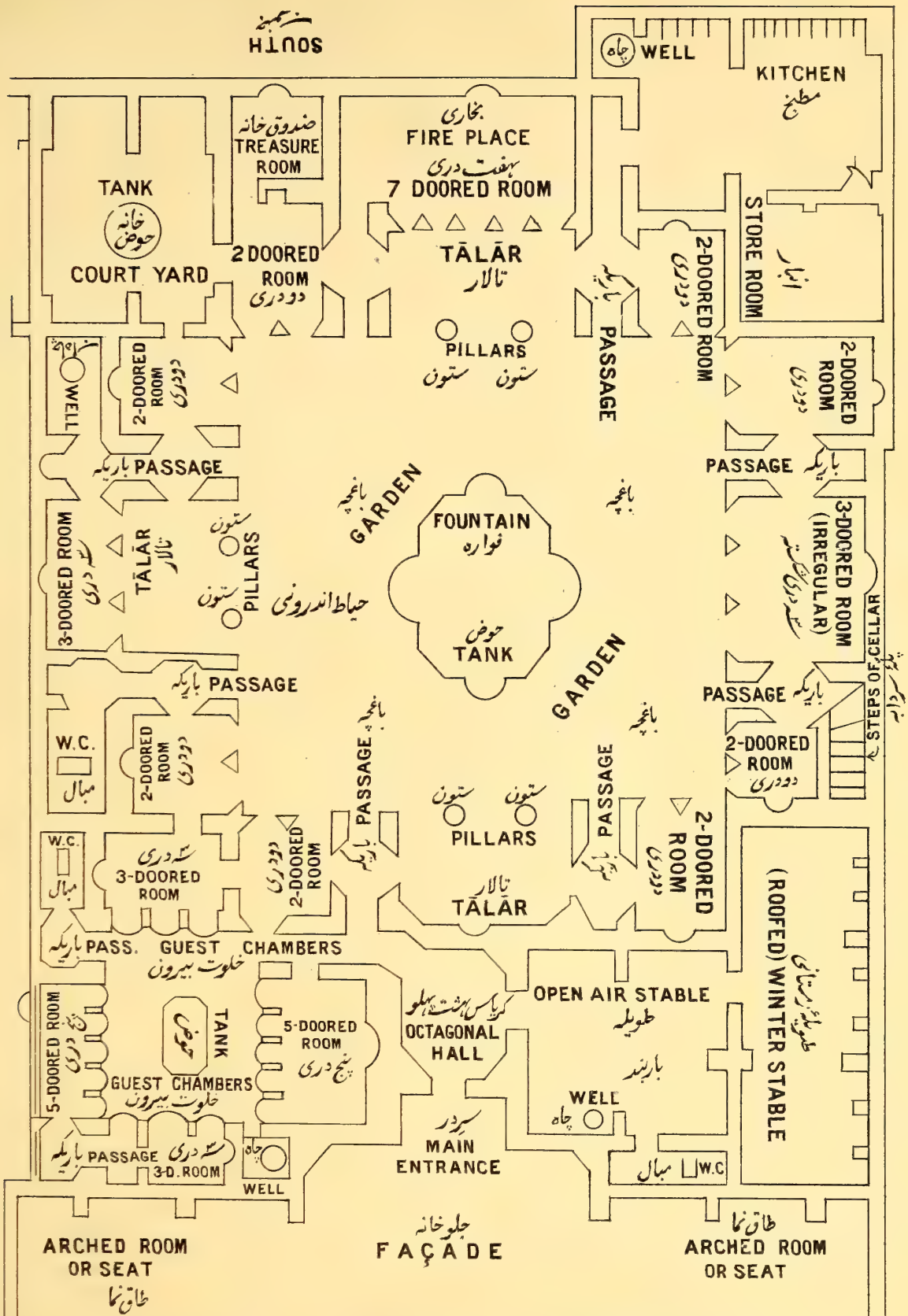

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